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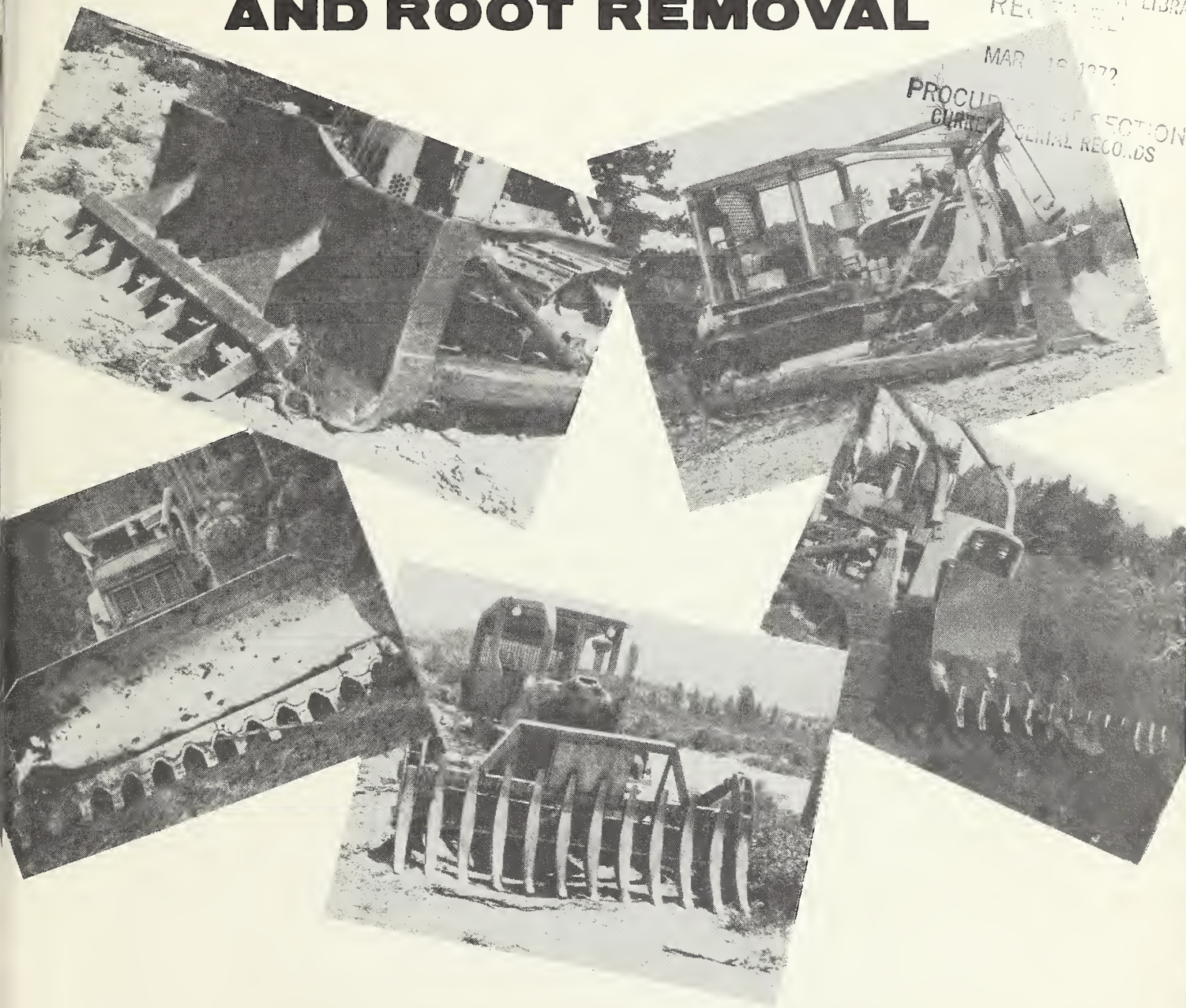
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TRACTOR ATTACHMENTS FOR BRUSH, SLASH, AND ROOT REMOVAL

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**EQUIPMENT DEVELOPMENT CENTER
SAN DIMAS, CALIFORNIA**

347237

Equipment Development and Test Report

2001
TRACTOR ATTACHMENTS
FOR
BRUSH, SLASH, AND ROOT REMOVAL

ED&T 1332

U.S. Department of Agriculture, Forest Service
Equipment Development Center
San Dimas, California

JANUARY 1971

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INTRODUCTION

This report is a compilation of information gathered under Equipment Development and Test Project #1332, "Tractor Attachments for Brush, Slash, and Root Removal".

The project was originated by the Division of Timber Management and the Equipment Management Branch of the Division of Engineering, Region 5.

The report contains information on various types of equipment available for brush, slash and root removal.

The text contains a brief discussion of land clearing methods and operational difficulties with recommendations relevant to proper equipment selection.

The appendix is a compilation of data on available equipment such as rakes, cutters, splitters, choppers and root plows.

The objective is to provide a reference for forest managers concerned with problems of slash removal. The introduction of new models by manufacturers will probably make some data obsolete but the types of equipment included should be available even if some design changes occur.

LAND CLEARING METHODS

The use of tractor-clearing equipment for site preparation, including clearing of rights-of-way, generally falls into five principal categories:

1. Site preparation and type-conversion in brush fields
 - a. Crush and burn
 - b. Pile or windrow and burn
 - c. Disc plow
2. Site preparation in recently burned-over timberlands
3. Site preparation of clearcut regeneration areas
4. Fuel breaks
5. Clearing road rights-of-way and special areas

All of the above approach total land clearing; however, large stumps are not extracted, except in rights-of-way clearing. When clearing is completed, the areas are usually suitable for either seeding or planting by mechanical means, depending upon the terrain.

1. Site preparation and type-conversion in brush fields.— The great expanse of brush-field areas permits considerable selection in working area topography. Although some steep slopes are included, most are not being cleared if they exceed 30 percent incline. Ridges and long, moderate slopes constitute a majority of the present clearing areas.

Although rocks and large stumps are common, they are not a major problem in equipment operation. For the most part, the stumps are in an advanced stage of decay or can be avoided, along with large rocks.

a. Crushing is usually done by sweeping the area with a dozer blade carried clear of the ground. The blade height will vary, depending on brush, size, density, and species. The crushed brush is then allowed to dry and is broadcast-burned in place. This method is particularly effective in brush types of a brittle nature, or when performed while vegetation is in a low-moisture condition. Follow-up spraying with herbicides to control resprouting is usually required after one or two growing seasons. Where native grasses are to be retained, the crush treatment provides the better results.

b. Piling or windrowing is especially effective where a rake-type implement is used. Rakes which tend to lift the material and sift out soil are preferred. If eventual disposal of the material may require burning, excessive dirt in the piles cannot be tolerated.

Field opinions on proper tooth-spacing range from 9 inches to 36 inches and vary considerably with soil and vegetation types. Although adjustment is desirable, it is probably of secondary importance as compared to weight.

Generally, no attempt is made to remove rocks or large, solid tree stumps; consequently, a rake of extremely heavy construction is not required.

The lighter types of rakes allow greater tractor maneuverability and, because of their greater width in some models, permit an increased brush load.

c. Disc plowing of brush fields tends to chop up the brush and expose root crowns, thus killing and reducing ground cover. Where soil erosion does not constitute a serious problem, or where air pollution from smoke is to be avoided, disc plowing may be desirable.

In order to be effective in brush ranging up to a maximum size of 6 to 8 feet in height and 3 inches in stem diameter, a heavy-duty disc weighing 700 to 1,000 pounds per linear foot of cut is essential.

2. Site preparation in recently burned-over timberlands.— Many of these burns contain brush, remnants of fire-killed timber, logging slash, and numerous stumps left from prefire logging or release and salvage cuts. Topography is usually moderate to severe. In order to perform effectively, equipment must be capable of operating on extreme slopes. Excessive front-end equipment weight is detrimental; and, even when the weight is counterbalanced, tractor efficiency is impaired.

3. Site preparation of clearcut regeneration areas.— These areas, being generally located in fir types and often in rugged topography, present a special problem in equipment operation. The heavy ground duff and litter — along with the accumulation of logging slash, culled logs, and fallen hardwoods — combined with steep slopes, result generally in difficult operating conditions. Tractors with maximum traction potentials are essential. Track ground area and tractor weight are extremely critical. A slight overload caused by heavy front-end equipment can cause soil shear and loss of traction when working steep slopes.

4. Fuel breaks.— In recent years, considerable emphasis has been put on construction of fuel breaks. These wide strips or blocks of interconnecting treated areas require removal or disposal by burning of practically all heavy dead and flash fuels. In many cases, a fireline is also constructed in conjunction with the cleanup. Where this is required, a bulldozer blade may be necessary. However, to insure complete burning of the heavy fuels, a rake is desirable. Where large stumps or rocks are to be moved, the heavy-duty rakes are recommended. Under normal circumstances, a lighter weight rake, such as either the general-purpose or blade rake, is adequate.

5. Clearing road rights-of-way and special areas.— All of the previously mentioned conditions and recommendations will probably apply in cleaning special areas; however, stump removal is also usually required. Under suitable conditions, removal of stumps can be accomplished more economically by use of stump-splitters than by blasting. Although these are available for either front or rear mounting, the need for a dozer or rake usually results in use of a rear-mounted splitter requiring operation of a ripper-equipped tractor.

OPERATIONAL DIFFICULTIES

The following general observations were made in the California Region:

1. Two major problems confront the operator: (a) Loss of traction and (b) Excessive dirt in the piles. Both can be greatly minimized by selecting suitable equipment. Solving the first problem requires a knowledge of tractor capabilities; the second, a knowledge of the proper tractor attachment to use.

2. Tractor capabilities are greatly influenced by track ground contact area and location of center of gravity. In one operation, two tractors of comparable track area and horsepower were not comparable in performance when piling slash on steep slopes. Investigation disclosed that the center of gravity on the poor performer was 40 inches above ground line, whereas the other had a 26-3/4 inch center of gravity.

3. Another operation resulted in discarding a well-constructed brush rake because of reduced tractor traction on slopes. This unit weighed 4,400 pounds as compared to the standard equipment dozer blade of 2,350 pounds. According to the operator, the increased front-end weight noticeably limited work on steep slopes, even though more than 3,000 pounds of counterweight in the form of a Carco winch was used.

4. Still another operation discontinued use of a blade rake because of performance limitations resulting from (1) the increased weight (1,800 pounds) and (2) the reduced effective piling height due to tooth extension below the moldboard. This is especially limiting when piling slash where stacking of heavy material is necessary to get a clean burn.

5. A contractor with a Caterpillar D7, working down steep slopes, discarded the rake for the blade because of operating grade limitations, with a resulting increase of dirt carried into the brush piles.

6. A Forest-owned Caterpillar D7 Dig'r Dozer has a blade and accessory weight of 6,175 pounds. It is extremely productive when clearing and roughing out roadbeds; but the increased weight, as compared to the normal blade weight of 2,800 pounds or the root-rake weight of approximately 4,000 pounds, materially limits its effectiveness when working up and down steep slopes.

AVAILABLE EQUIPMENT

Heavy-duty rakes.— These are very sturdily constructed rakes which replace the dozer blade, and are available for either the angle or straight dozer. Designed to withstand forces involved in extracting stumps and rocks, they are best suited for heavy complete clearing jobs. Because of increased weight (see "Comparison of Fleco Rake Weights", page 10), they are not as satisfactory on steep slopes as lighter equipment would be, and should always be counterbalanced by a winch or suitable weights.

A recent development by Fleco is their Heavy Duty Clearing Rake. Use of a high-strength steel alloy in this rake results in a weight reduction of approximately 750 pounds in the D7 angle dozer size and 1,525 pounds in the D7 straight dozer size as compared to their MA Rake.

The Fleco MA Rakes, the Fleco Rock Rake, and the Heavy Duty Clearing Rakes are designed for Caterpillar tractors; the Rockland RF3 is designed for International tractors. The Young Corporation Clearing Blade is available for International, Caterpillar, or Allis-Chalmers tractors. These are typical of extra-strength heavy-duty clearing rakes.

Brush racks for increased blade height and brush loads are recommended. They are available as stock items for all of the above units except the Young Clearing Blade and Fleco Clearing Blade in the D7 size, which are 68 and 70 inches, respectively, in overall height.

If a quick change from the Fleco Rakes to the dozer blade is desirable, the Fleco Quick Change Group AA10120 is suggested. It is available for the Caterpillar D7-size tractor.

Heavy-duty rakes for which specification sheets are included in the appendix are as follows:

	<u>Page</u>
FLECO MULTIAPPLICATION (MA) RAKE	21
FLECO ROCK RAKE	23
FLECO HEAVY-DUTY CLEARING RAKE	25
ROCKLAND RF3 RAKE	27
YOUNG CLEARING BLADE	29

COMPARISONS OF FLECO RAKE WEIGHTS

<u>MA (MULTIAPPLICATION) RAKE</u>		D8	D8	D8	D7	D6	D6	D5	D4
Cat		D8	D8	D8	D7	D6	D6	D5	D4
Track-Type Tractor		35A, 36A, 46A	13A, 14A, 15A	2U, 47A, 48A	3T, 17A	74A, 76A	9U, 44A	82H, 84H	
Dozer Model		8A 8S	8A 8S	8A, 7A 8S, 7S	7A 7S	6A-74" 6S-74"	6A-74" 6S-74"	5A-74" 5S-74"	4A-60" 4S-60"
Total Weight (Approx. Lbs.)		5800 6800	6100 5730	4550 5425	4455 4435	3150 3550	3135 2900	3135 2900	1600 1650
<u>ROCK RAKE</u>									
Cat		D8	D8	D7	D7	D6	D6	D5	D4
Track-Type Tractor		35A, 36A, 46A	2U, 13A, 14A, 15A	47A, 48A	3T, 17A	74A, 76A	9U, 44A	82H, 84H	7U, 40A, 78A, 22C
Dozer Model		8A 8S	8A 8S	7A 7S	7A 7S	6A-74" 6S-74"	6A-74" 6A-74"	5A-74" 5S-74"	4A-60" 4S-60"
Total Weight (Approx. Lbs.)		6220 6000	4415 4715	3620 4700	4100 4300	2750 3015	2700 2900	2700 2900	1450 1610
<u>ROOT RAKE</u>									
Cat		D8	D8	D7	D7	D6	D6	D5	D4
Track-Type Tractor		35A, 36A, 46A	2U, 13A, 14A, 15A	47A, 48A	3T, 17A	74A, 76A	9U, 44A	82H, 84H	39A, 40A, 78A, 22C
Dozer Model		8A 8S	8A 8S	7A 7S	7A 7S	6A-74" 6S-74"	6A-74" 6S-74"	5A-74" 5S-74"	4A-60" 4S-60"
Total Weight (Approx. Lbs.)		5560 5040	4460 4560	3440 4200	3625 3915	2600 2655	2365 2720	2365 2720	1505 1675
<u>H D CLEARING RAKE</u>									
Cat		D8		D7		D6		D5	D4
Track-Type Tractor		36A, 46A		47A, 48A		74A, 76A		82H, 84H	78A
Dozer Model		8A 8S		7A 7S		6A 6S		5A 5S	4A 4S
Total Weight (Approx. Lbs.)		5660 5800		3800 3900		2750 2750		2250 2250	1400 1400
<u>BRUSH AND CLEAN-UP RAKE</u>									
Cat		D8	D8	D7	D7	D6	D6		D4
Track-Type Tractor		25A, 36A, 46A	2U, 13A, 14A, 15A	47A, 48A	3T, 17A	74A, 76A	9U, 44A		(A11)
Total Weight (Approx. Lbs.)		6700	4000	3950	3200	3000	2300		1850

Root and General Purpose Rakes.—These are considerably lighter in construction than the heavy-duty rakes and are designed primarily for light to moderate clearing. Weight reduction varies by makes and sizes. The following examples are typical. The Fleco D7 angle size MA Rake weighs approximately 4,550 pounds; the HD Clearing Rake, 3800; and the Root Rake, 3440. The Young Clearing Blade in the above size is 4,995 pounds, whereas the Brush Blade and Rack weigh 3,220 pounds.

Generally, these are not equipped with replaceable points like those supplied on most heavy-duty rakes. In clearing brush fields and piling slash, where grubbing of tree stumps or rocks is not required, these rakes perform satisfactorily and permit better tractor maneuverability on steep slopes. (Further evaluation is needed to determine their suitability for use in the heavier clearing and piling areas.)

The Fleco Root Rake unit is designed for Caterpillar tractors; the Rockland RG-1, for International tractors.

The Young Brush Blade with Brush Guard is available for either International, Caterpillar, or Allis-Chalmers crawler tractors.

General-purpose rakes for which specification sheets are included in the appendix are as follows:

	<u>Page</u>
FLECO ROOT RAKE	30
ROCKLAND RG-1 RAKE	32
YOUNG BRUSH BLADE WITH BRUSH GUARD	34

Brush, Cleanup, and Stacking Rakes.— This type is designed for stacking loose material and is not as sturdily constructed as either the heavy-duty or the general-purpose rakes.

The increased width (nearly 2 feet) of the Fleco Brush and Cleanup Rake permits greater production in brush piling. Where conditions such as light brush cover permit its use, or in conjunction with a second clearing unit, it has outperformed other types in production and clean piles. It is available for Caterpillar D4 and D8 tractors. The Fleco Brush Rake is also of lighter construction and greater width and is designed primarily for cleanup and piling. Because of the solid blade, it would not be as effective in eliminating dirt from the piles as would the Brush and Cleanup unit.

The Rockland ST Stacking Rake, designed for International crawler tractors, is typical of the lighter weight brush-piling types.

Brush, cleanup, and stacking rakes for which specification sheets are included in the appendix are as follows:

	<u>Page</u>
FLECO BRUSH AND CLEANUP RAKE	35
FLECO BRUSH RAKE	37
ROCKLAND ST STACKING RAKE	39

Blade Rakes and Utility Dozer Teeth.— This type of rake is an add-on to the standard dozer blade, whereas the heavy-duty, general-purpose, and brush rakes all replace the existing blade.

The advantage of these units is quick removal for use of the blade, especially for construction of fire control lines. The disadvantages are increased weight and reduced clearing width in some models.

The adjustable arm, H&L Brush Grubber, fits all dozer blades and tractor sizes (see "Crawler Tractor Comparative Data", page 19) and requires only welding on of mounting brackets to adapt. Removal or reattachment is made by merely removing or inserting two pins.

The Fleco Blade Rake has a similar blade attachment, but it is not interchangeable between tractors of different sizes. The effective clearing width is greater than that of the H&L; however, it does not utilize replaceable teeth or points.

The Young Detachable Rake Front is somewhat similar to the H&L Brush Grubber, but lacks the adjustable shank and arm features, thus limiting its use to tractors of a specific size.

Rivinius, Inc., P.O. Box 185, Eureka, Illinois 61530, builds a quickly detachable clamp-on brush rake for use with bulldozer-equipped Cat track-type tractors. It is sold through Caterpillar distributors.

Young Corporation builds a Utility Dozer Tooth suitable for attachment to a straight dozer blade. These clamp-on teeth can be used to convert a dozer into a brush rake, or a single tooth may be used for stump removal.

Blade rakes and utility teeth for which specification sheets are included in the appendix are as follows:

	<u>Page</u>
FLECO BLADE RAKE	41
H&L BRUSH GRUBBER	43
YOUNG DETACHABLE RAKE FRONT	44
YOUNG UTILITY DOZER TOOTH	44

Stacker and Clamp Rake. - The new tractor stacker rake has previously been available only for the Traxcavator. It is now available with a special "C" frame for high lifting to fit on D7 and D6 Caterpillar tractors. The hydraulically operated clamp is optional and would add 400 to 600 pounds. The advantage of this type of rake would be its ability to stack hard-to-burn fuels much higher and more tightly than a rake that only pushes. If it is used in conjunction with the clamps, the material can also be carried and placed into the pile for most effective burning.

The stacker and clamp rake for which a specification sheet is included in the appendix is as follows:

FLECO TRACTOR STACKER RAKE

Page
45

Clearing Blades.— There are two shearing blades in common use for land clearing. They have been used effectively in hardwood stands wherever stump removal was not a requirement. They are not recommended for use in areas having more than a few isolated rocks.

The Rome KG Clearing Blade has a leading splitter on the left cutting edge of the blade and can be used for piling as well as splitting or shearing. Rome also manufactures a Vee Blade designed for brush shearing. Rome products are designed to interchange with Caterpillar equipment.

Fleco manufactures a V- Tree Cutter using a center-mounted stump-splitter and serrated cutting blades for improved shearing action.

Clearing blades for which specification sheets are included in the appendix are:

ROME KG CLEARING BLADE (KG & KGA Series)	<u>Page</u>
ROME VEE BLADE BRUSH CUTTER (Discontinued)	46
FLECO V-TREE CUTTER	49

Stumpers and Stump Splitters.— The use of tractor-mounted stump splitters has become increasingly popular where fire, safety hazards, or other objections limit or prohibit the use of explosives. Splitters do not make extensive cleanup necessary, as blasting does.

The Young Corporation produces a Stump Splitter which can be mounted on the mid-section of their Clearing Blade or fitted to the crossbeams of the Ateco, International Harvester, and Allis-Chalmers tractor-mounted rippers.

The Fleco Stump Splitter is designed for mounting on D8 and D9 ripper-equipped tractors. Rear-mounted splitters are popular because they permit freedom in the selection of front blades or rakes.

Fleco also produces a front-mounted detachable Stumper to which a Side-Mounted Splitter can be attached for use on the angle dozer's "C" frame.

Stumpers and stump-splitters for which specification sheets are included in the appendix are:

	<u>Page</u>
YOUNG CORPORATION STUMP SPLITTER	51
FLECO REAR-MOUNTED RIPPER BAR STUMP SPLITTER	54
FLECO DETACHABLE STUMPER	53
FLECO SIDE-MOUNTED STUMP SPLITTER	52
ROCKLAND SM-4 STUMPER	51

Drum-Type Rolling Choppers.— In relatively rock- and stump-free areas where brush size and density allow the use of rolling choppers, these choppers have proven very effective. Slopes in excess of 25 percent usually exceed the tractor-towing limitation. In heavy brush and slash areas, this treatment tends to reduce fire resistance to control; however, where burning the ground cover is part of the treatment, the mixing of dirt with the debris may prevent a clean burn.

The Marden Brush Cutters are equipped with "Hi-Lo" blades and weightless draw-bars. Their two sections when used in tandem are referred to as Marden Duplex and incorporate a patented adjustment between sections which permits angling the drums for more effective chopping. They are also available in double sections to increase width of cut.

The Fleco Rolling Choppers are available in single, tandem, dual, and triple sections.

The Rockland Rolling Crusher features a V-type knife assembly, also referred to as "herringbone" or "chevron" design, available on special order.

Specification sheets are included in the appendix for the following:

	<u>Page</u>
MARDEN BRUSH CUTTERS	55
FLECO ROLLING CHOPPERS	56
ROCKLAND CHOPPERS	60

Root Plows and Root Cutters. — The use of root plows is especially effective in the flat, arid sites. Here the sparse and slow-growing vegetation can be undercut or sheared by the blade. The soil conditions are normally improved by breaking up the soil; however, areas containing more than a few scattered small rocks must be avoided. Periods of good ground moisture are usually most desirable for this work because power requirements and maintenance costs are reduced at such times.

The Fleco Root Plow is a trunnion-mounted draft implement, hydraulic- or cable-operated. However, a tool-bar-mounted unit is also available for smaller (D-4 to D-6) tractors.

The Young Corporation produces a Root Cutter which attaches to their towed ripper shanks. These are available with either hydraulic or cable lift.

Rockland, Inc., manufactures the Rockland Root Plow, which attaches to their Tool Bar and is matched to Euclid C-6 and TC-12 tractors.

Specification sheets for the following implements are included in the appendix:

	<u>Page</u>
FLECO ROOT PLOW	62
YOUNG ROOT CUTTER	64
ROCKLAND ROOT PLOW AND TOOL BAR	65

Disc Harrows and Plows. — In the extremely rocky and brush-covered areas of the Lake States, the Athens Model C4, a 26-inch disc plow, has been commonly used in tandem for site preparation. It is being discontinued; however, a Model S8-28 single cut is available from Athens Plow Company, Athens, Tennessee 37303.

Although numerous modifications were required to increase service life, the disc plow is one of the few pieces of equipment capable of preparing this rock-strewn type of ground. Typical modifications included increasing each section's weight from 1,450 to 2,000 pounds and doubling up discs to reduce breakage.

The Brushland Plow is popular on Western ranges for plowing out many brush species. Its design, by which each set of discs is individually sprung, makes it especially suitable for rocky ground. The total weight is approximately 6,000 pounds. It is not produced as a commercial item. Drawings and specifications are available from the San Dimas Equipment Development Center.

Rome Disk and Plow Company, Cedartown, Georgia, and Towner, P. O. Box 3096, Santa Ana, California 92706, also produce several disc plows suitable for brush plowing. Towner's most recent development is a giant offset disc plow, available with 32- or 36-inch discs. Total weight is approximately 1,000 pounds per foot of cut. A D-7-size or T9-class tractor would be required for a 12-foot unit under ordinary conditions.

Specification sheets are included in the appendix for the following:

	<u>Page</u>
ATHENS MODEL S8-28 SUPER HARROW	66
BRUSHLAND PLOW	67
ROME BUSH AND BOG TANDEM HEAVY-DUTY HARROW	69
TOWNER GIANT OFFSET DISC PLOW	77

DISCUSSION

Many contractors have fabricated their own rakes in order to reduce initial equipment costs while still meeting local requirements. These rakes are, for the most part, unsuitable. In some cases, for cost-cutting reasons, the work was performed with a dozer blade. In several instances, the blade was used as a last resort in order to complete slopes within the contract area too steep for operating tractors with heavy front-end equipment.

In many cases, contractors use the site preparation jobs as fill-in work. This is understandable because in most areas they are limited to small acreages which do not permit investment in special equipment or full-season employment. In many areas, either contract or Forest-owned equipment must be readily available for fire control assignments. Under these conditions, the use of a rake which replaces the blade results in time lost in moving the tractor to the blade location, in addition to changeover time.

Although it is frequently impractical to use two tractors on one contract, such an arrangement would be advantageous in that it would permit combinations of special equipment; and a second tractor would be available in case one gets into difficulty. This could reduce operating costs and would justify selecting large areas for special handling or contracting.

The number and types of Forest Service-owned equipment tend to limit the selection of special implements. The purchase and ownership of special attachments by the Forest Service may be justified in areas where the supply of privately owned equipment is limited.

RECOMMENDATIONS

1. Tractors which are to operate on steep slopes should be equipped with a weight, winch, or other suitable counterbalance. Tractor pads should be of the maximum operating width, and the advisability of increasing grouser height to improve traction should be investigated.

2. Complete radiator, crankcase, and hydraulic hose line protection must be provided.

3. Where quick removal of raking equipment for fire control is essential, a blade rake should be considered. Where such rakes are Forest-owned and frequently used on different tractors, the H&L Model 8-AA-2 should be considered, since it fits all makes of dozers. The Fleco Quick Change kit for the Caterpillar D7 Fleco Rakes is recommended where frequent rake and dozer-blade exchanges are necessary.

4. Specially designed rakes utilizing lightweight, high-strength materials for maximum weight reduction should be considered for steep sidehill use.

5. A study should be made to determine maximum tooth-spacing in order to insure the greatest production and eliminate excessive weight. For brush clearing, 16- to 20-inch spacing may be desirable; for slash piling, 30- to 36-inch spacing may be optimum. A provision for adjustable spacings of 12 to 36 inches between teeth may be essential in all rakes.

6. Where large amounts of difficult-to-burn material are involved, the stacker rake would insure improved piles and result in cleaner burns.

7. The structural limitations of the lightweight brush and root rakes should be established by field use. An evaluation of these can be secured by cataloging and gathering field data on units which are currently in field use.

8. Guides for design and fabrication of a suitable rake should be available for contractors who prefer constructing their own.

APPENDIX ^{1/}

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^{1/} Brochures and specifications contained in the appendix were reproduced from material supplied by the manufacturers. Requests for additional information should be made directly to the manufacturer.

CRAWLER TRACTOR COMPARATIVE DATA
Listed According to Table I Tractor Minimum Requirements,
Interim Federal Specifications KKK-T-00631b(GSA-FSS)

Tractor Size	Tractor Make & Model	Applied net horsepower at flywheel ^{1/}	Engine G-Gas D-Diesel	Direct gear drive Drawbar horsepower	Number F & R speeds	Hydraulic torque converter-type drive ^{2/} Drawbar lbs. pull @ 1.2 mph ground speed	Length of track on ground ^{3/}	Tractor gauge width ^{4/}	Tractor shipping weight
T-1	Min. Requirement	30		20	3-1	4,000	Inches 60	Inches 48	
	None available								
T-2	Min. Requirement	37		27	4-1	5,500	63	48	
	John Deere 350	42	G	30	4-1	-	69.25	48	7,825
	John Deere 350	42	G	30	4-1	-	69.25	48	7,895
	I.H.C. 500C*	44	G-D	**	4-4	-	67.5	50	7,050
	I.H.C. 500C*	44	G-D	-	3-3	**	67.5	50	7,260
	Case 310 G	37.7	G	27.74	3-1	63	63	48***	5,395
	Case 310 G	37.7	D	31.58	3-1	63	63	48***	5,685
T-3	Min. Requirement	47		38	4-2	7,500	69	48	
	John Deere 450	57	D	44	8-4	-	72.75	52	10,590
	Case 450	51	D	-	4-4	11,500	68.5	50	8,850
	I.H.C. TD-6(62)	50	D	42.3	5-1	-	69.3	50	8,872
T-4	Min. Requirement	54		43	4-2	9,500	71	52	
	Case 850	66	D	-	4-4	13,000	73	54	13,000
T-5	Min. Requirement	65		52	4-2	12,000	72	60	
	Cat. D4-D	65	D	55	5-5	-	72.5	60	13,000
	Cat. D4-D	65	D	-	3-3	13,190	72.5	60	13,100
	Case 1150	85	D	-	4-4	18,000	82.25	60	15,357
	A-C HD6B	66	D	54	4-2	-	76	60	12,600
	A-C HD6EP	72	D	-	2-2	12,600	76	60	14,100
	I.H.C. TD-9(B)	66	D	56	4-2	(15,400 T.W.)	72.3	60	12,480
	I.H.C. TD-9(B)	75	D	-	2-2	12,000	72.3	60	12,530
						(13,333 T.W.)			
T-6	Min. Requirement	90		72	5-3	16,500	85	74	
	Cat. D-5	93	D	75	5-4	-	87	74	18,500
	Cat. D-5	93	D	-	3-3	18,440	87	74	19,300
T-7	Min. Requirement	120		96	5-3	22,000	87	74	
	Cat. D6-C	125	D	99.5	5-4	-	93.3	74	23,200
	Cat. D6-C	125	D	-	3-3	22,780	93.3	74	23,700
	A-C HD11E	123	D	101	6-3	-	92	74	21,700
	A-C HD11EP	137	D	-	2-2	22,500	92	74	23,000
						(25,000 T.W.)			
	I.H.C. TD15(B)	120	D	96	5-4	-	94	74	22,350
	I.H.C. TD15(B)	120	D	-	4-4	22,000	94	74	22,200
						(24,445 T.W.)			
T-8	Min. Requirement	160		125	5-3	29,500	95	74	
	I.H.C. TD20(B)	160	D	-	4-4	29,500	95.7	74	30,300
						(32,780 T.W.)			
T-9	Min. Requirement	180		144	5-3	33,000	103	74	
	Cat. D7-E	180	D	144	5-4	-	107	78	33,500
	Cat. D7-E	180	D	-	3-3	33,000	107	78	34,000
	A-C HD16DP	184	D	-	2-2	33,000	107	74	34,200
						(36,700 T.W.)			
T-10	Min. Requirement	210		170	5-3	39,000	114	74	
	Terex 82-30	225	D	-	3-3	40,000	115.12	78	45,500
	I.H.C. TD-25(B)	230	D	185	8-8	-	118	80	49,565
	I.H.C. TD-25(B)	230	D	-	4-4	39,000	118	80	50,000
						(49,300 T.W.)			
T-11	Min. Requirement	260		215	6-6	48,000	120	78	
	Cat. D8-H	270	D	216	6-6	-	124	84	49,000
	Cat. D8-H	270	D	-	3-3	48,280	124	84	50,000
	Terex 82-40	275	D	-	3-3	48,000	124	78	51,300
	A-C HD21P	268	D	-	3-3	49,000	120	84	50,000
						(54,500 T.W.)			
	I.H.C. TD-25(C)	230	D	230	8-8	-	124	84	53,600
	I.H.C. TD-25(C)	285	D	-	4-4	48,000	124	84	53,986
T-12	Min. Requirement	345		315	6-6	62,500	130	84	
	Cat. D9-G	385	D	-	3-3	64,040	132.5	90	67,000
	Terex 82-80	440	D	-	3-3	65,700	131	110	73,000

*Manufactured in Canada **Not available ***Also available in 36" gauge as 310 Series G Trail Dozer
(... T.W.) - Test Weight

^{1/} Manufacturer's certified applied net horsepower at flywheel of fully equipped engine at rated governed rpm which includes power deductions for fan, generator, and water pump (observed at factory for turbocharged diesel engines, but with correction to 500 feet altitude dry barometric pressure of 29.00 inches of mercury and 85°F by SAE J816a allowed for nonturbocharged spark ignition and diesel engines, verified for diesel engine by regular production dynamometer tests).

^{2/} Drawbar pull available with tractor test weight specified in 3.14.2 and traction at 1.2 miles per hour minimum tracklaying ground speed, verified by manufacturer's published or certified performance for tractors with torque converter type drive.

^{3/} Minimum length of track from centerline of sprocket to centerline of front idler.

^{4/} Minimum tractor gauge width between track centers (see 6.1).

NEW AND OLDER MODEL TRACTORS STILL IN USE IN THE REGIONS

MAKE, MODEL & SERIAL NUMBER

NET ENG. HP	ALLIS- CHALMERS	CATERPILLAR	INTER-HARVESTER
280-400		D-9 66A 34A 50A 49A 19A 18A	TD-30 All Series
203-279	HD-21A	D-8 46A 36A 35A	TD-25 All Series
L63-202	HD-20 HD-19 HD-16 DC DP	D-8 15A 14A 13A (2) 2U(MOD)	TD-24 All Series
121-162	HD-16A HD-160 HD-15 HD-14 HD-11 EC EP	D-8 2U 8R D-7 48A 47A 17A	TD-20 All Series TD-18 (181 & 182)
95-120	HD-11-B HD-11-E HD-10 HD-9	D-7 6T 4T 3T D-6 74A 76A	TD-18A TDR TD-15 (151) TD-15 (150) TD-14 (142)
65-94	HD-7 HD-6 All Series	D-6 37A 44A 9U 8U 5R D-4D D-4C	TD-18 TDR TD-14 141 TD-14A TD-9 (91 & 92)
40-64	HD-5	D-4	TD-9 TDB TDCB TD-6

MA (MULTI-APPLICATION) RAKE

FLECO

LAND CLEARING EQUIPMENT

MA9
MA8
MA7
MA6
MA5
MA4

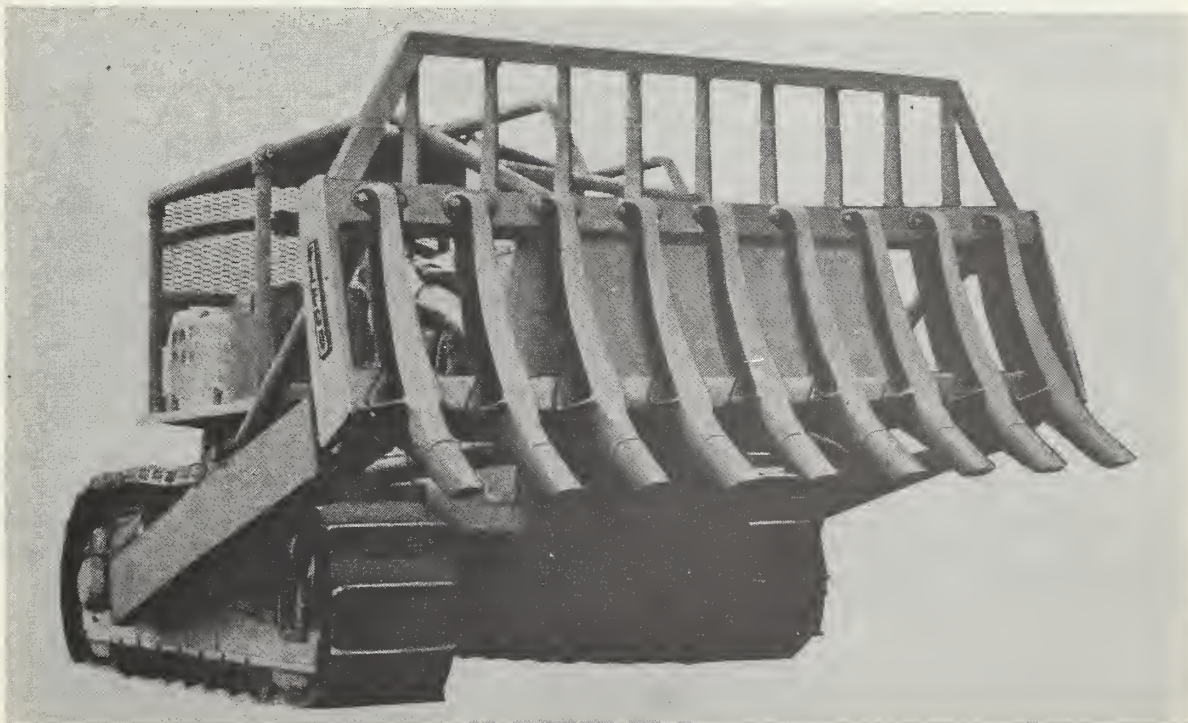
FOR MAXIMUM SERVICE LAND CLEARING including tree, stump and rock removal.

TOP BRUSH RACK increases load carrying capacity up to 40%.

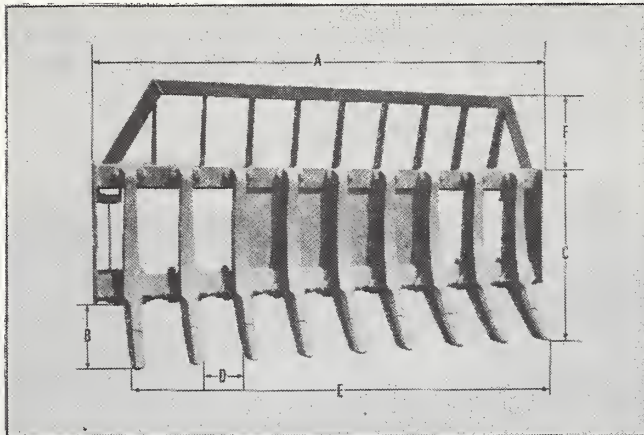
CENTER PLATE protects the radiator and tractor front.

WEAR TIPS, of high strength steel, prevent abrasive wear to bottom of teeth.

INTERCHANGEABLE with the dozer blade, using the standard bulldozer components.



FLECO MA (MULTIAPPLICATION) RAKE SPECIFICATIONS



The Heavy-Duty MA RAKE is used for clearing trees and removing rocks and stumps. Tractors clearing land should be equipped with Fleco Cab Guards.

FOR USE WITH CATERPILLAR TRACK-TYPE TRACTORS

CAT TRACK TYPE TRACTOR DOZER MODEL	D9		D8		D8		D8		D7		D7		D6		D6		D5		D4	
	9A	8S	35A, 36A, 46A 8A	8S	13A, 14A, 15A 8A	8S	2U, 47A, 48A 8A, 7A	6S,7S	3T, 17A 7A	7S	6A-74" 6S-74"	7A	7S	74A, 76A 6A-74" 6S-74"	9U, 44A 6A-74" 6S-74"	82H, 84H 5A-74" 5S-74"	8A-74" 8S-74"	5A-74" 5S-74"	4A-60" 4S-60"	4S-60"
A. LENGTH	14'-3"	13'-8"	12'-8"	12'-8"	12'-8"	11'-5"	12'-1"	12'-1"	12'-2"	11'-1½"	11'	11'	11'-3½"	10'-2"	11'-3½"	10'-2"	9'	9'		
B. TOOTH PENETRATION	21"	21"	20"	20"	20"	20"	20"	20"	18"	18"	16"	16"	16"	16"	16"	16"	16"	15"	15"	
C. LENGTH OF TOOTH	5'-10½"	5'-10½"	4'-8"	4'-8"	4'-8"	4'-8"	4'-11"	4'-11"	4'-7"	4'-7"	3'-8"	3'-8"	3'-8"	3'-8"	3'-8"	3'-8"	3'-8"	3'-2"	3'-2"	
D. OPENING AT TOOTH TIPS	13½"	13½"	12"	12"	10½"	10½"	12"	12"	10½"	10½"	10½"	10½"	10½"	9½"	9½"	10½"	10½"	10½"	10½"	
E. RAKING WIDTH	12'-4½"	12'-4½"	11'-3"	11'-3"	10'	10'	11'-3"	11'-3"	11'	10'-1"	10'	10'	10'-3¼"	9'-4"	10'-3¼"	9'-4"	7'-10"	7'-10"		
F. BRUSH RACK HEIGHT	26"	26"	26"	26"	26"	26"	20"	20"	20"	20"	20"	20"	20"	20"	20"	20"	20"	18"	18"	
BRUSH RACK WEIGHT	455	455	425	425	370	370	360	360	310	310	300	300	300	300	300	300	300	145	145	
NO. OF TEETH	9	9	9	9	9	9	9	9	10	9	9	9	10	9	10	9	8	8	8	
TOOTH WEIGHT (LBS.)	515	515	290	290	290	290	240	240	240	240	142	142	142	142	142	142	86	86		
TOTAL WEIGHT (APPROX. LBS.)	9185	9852	5800	6800	6100	5730	4550	5425	4455	4435	3150	3550	3135	2900	3135	2900	1600	1650		

1 inch (") = 2.54 cm

1 foot (') = 0.3048 m

1 pound = 0.453 kg

GENERAL INFORMATION

The MA (Multiapplication) RAKE is a maximum service land clearing attachment for removing trees, stumps and rocks. It has a high strength steel frame and special alloy steel teeth. Both frame and teeth will withstand the maximum amount of shock loading likely to be encountered by the RAKE on any land clearing operation.

The MA RAKE is available for all model Caterpillar track-type tractors. It is interchangeable with the blade, using the standard bulldozer components.

In addition to a heavy-duty frame and high strength teeth, the MA RAKE has a number of features which make it well suited for use on land

clearing jobs where conditions dictate that maximum service equipment be used. The replaceable wear tips prevent the teeth from wearing and thus prolong their service life. A brush rack, which is welded onto the frame, increases load carrying capacity by as much as 40%. A steel plate, which is an integral part of the frame, protects the radiator and front of the tractor.

The MA RAKE should be used to clear land of large trees and for removing stumps and boulders. It is also recommended for use when topography and soil conditions are such that heavy-duty equipment is required.

FLECO CORPORATION, JACKSONVILLE, FLORIDA, U.S.A.

FLECO OVERSEAS LIMITED, NASSAU N.P., BAHAMAS

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ROCK RAKE

FLECO

LAND CLEARING EQUIPMENT

RK8
RK7
RK6
RK5
RK4

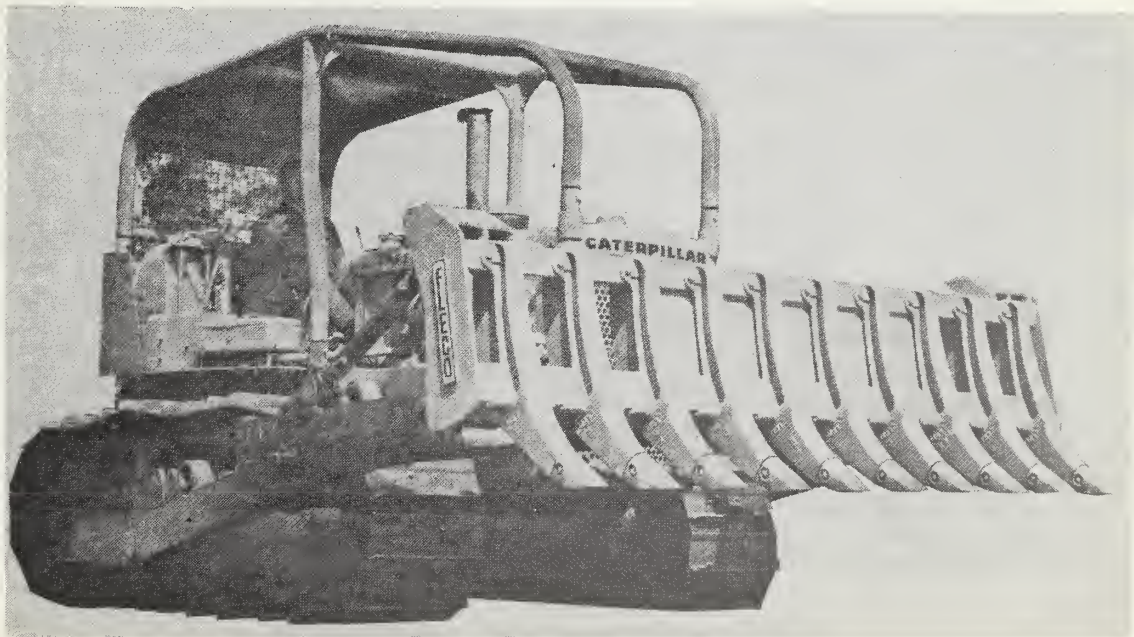
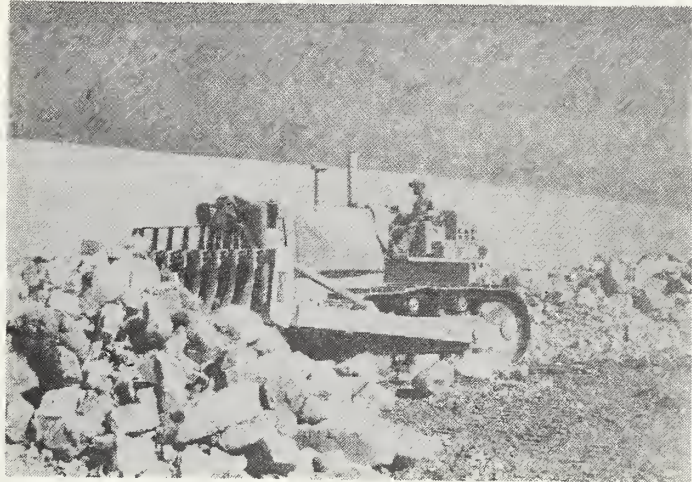
FOR MEDIUM SERVICE LAND CLEARING including tree, stump and rock removal.

TEETH ARE CURVED to roll material and spread rock riprap. Available with teeth spaced to a minimum of six (6) inches or spaced wider than standard.

CENTER PLATE protects the radiator and tractor front.

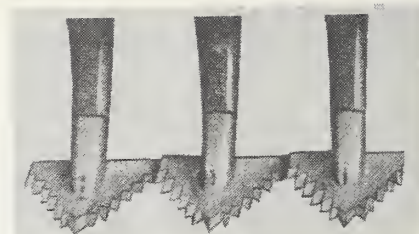
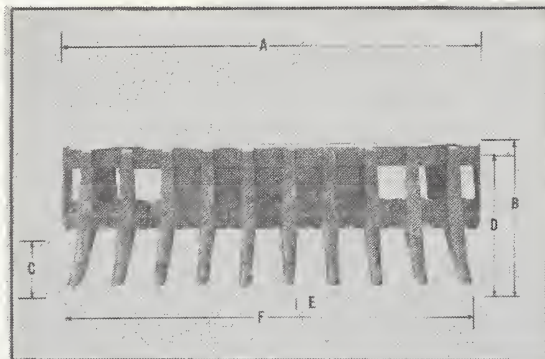
WEAR TIPS, of high strength steel, prevent abrasive wear to bottom of teeth.

INTERCHANGEABLE with the dozer blade, using the standard bulldozer components.



Form 11E—11-67

FLECO ROCK RAKE SPECIFICATIONS



SAW-TOOTH BLADE SHOES

Serrated edges operate at ground level to tear out growth. Attach to each tooth with one bolt.

FOR USE WITH CATERPILLAR D8, D7, D6, D5 AND D4 DOZER EQUIPPED TRACTORS

CAT TRACK-TYPE TRACTOR MODEL	D8 35A, 36A, 46A		D8 2U, 13A, 14A, 15A		D7 47A, 48A		D7 3T, 17A		D6 74A, 76A		D6 8U, 44A		D5 82H, 84H		D4 7U, 40A, 78A, 22C	
	8A	8S	8A	8S	7A	7S	7A	7S	6A-74"	6S-74"	6A-74"	6S-74"	5A-74"	5S-74"	4A-60"	4S-60"
A. LENGTH	14'	12'7½"	12'7½"	11'4"	12'7½"	11'4"	12'	11'4"	11'8"	11'8"	11'2½"	10'3"	11'2½"	10'3"	9'7¾"	9'
B. HEIGHT (Overall)	56"	53"	57"	51"	47½"	50"	51"	51"	45"	40"	40"	46"	40"	46"	40"	40"
C. MAX. TOOTH PENETRATION	22"	22"	19"	19"	19"	19"	19"	19"	21"	21"	17"	17"	17"	17"	16"	16"
D. LENGTH OF TOOTH	50"	50"	47"	47"	47"	47"	42"	42"	42"	42"	36"	36"	36"	36"	36"	36"
E. OPENING AT TOOTH TIPS	10¾"	10¾"	9½"	9½"	9½"	9½"	10"	10"	10¾"	10¾"	9"	9"	9"	9"	10½"	10½"
F. RAKING WIDTH (Max. Teeth)	11'2"	11'2"	10'1"	10'1"	10'1"	10'1"	10'1"	10'1"	10'7"	10'7"	9'7"	9'7"	9'7"	9'7"	7'10"	7'10"
NUMBER OF TEETH	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8	8
TOTAL HGT. WITH BRUSH RACK	74"	74"	63"	63"	63"	63"	63"	63"	57"	57"	55"	55"	55"	55"	52"	52"
*BRUSH RACK WEIGHT (Lbs.)	325	325	270	270	270	270	270	270	250	250	210	210	210	210	100	100
**TOOTH WEIGHT (Lbs.)	276	276	261	261	261	261	216	216	123	123	129	129	129	129	79	79
TOTAL WEIGHT (Approx. Lbs.)	6220	6000	4415	4715	3620	4700	4100	4300	2750	3015	2700	2900	2700	2900	1460	1610

*Brush Rack available as accessory; when ordered, add to total Rake weight.
**Tooth weight includes wear tip.

1 inch (") = 2.54 cm

1 foot (') = 0.3048m

1 pound = 0.453 kg

GENERAL INFORMATION

The ROCK RAKE is a medium service land clearing attachment. It is suitable for grubbing trees, rocks and stumps as well as raking and piling downed trees and brush.

ROCK RAKE teeth are equipped with flush fitting wear tips. The wear tips are made of heat treated, alloy steel for maximum resistance to impact and abrasion. The wear tip is attached to the end of the tooth with a single nut and bolt.

A center plate which is an integral part of the frame is also standard equipment on the ROCK RAKE. The center plate provides protection for the radiator and front of the tractor.

The ROCK RAKE is available for all Caterpillar track-type tractors except the D-9 model. It is interchangeable with the blade, using the standard bulldozer components.

Teeth on the ROCK RAKE are curved to give a rolling action to the material being moved. This rolling action helps shake dirt loose from roots and brush. Teeth are spaced so that loose dirt falls

through the openings and is not moved with the load.

The ROCK RAKE is an excellent tool for grubbing and moving rocks and boulders. Since the teeth are designed to roll material, it is well suited for spreading rock riprap.

The ROCK RAKE can be supplied with teeth spaced to a minimum of six (6) inches for applications such as spreading and sizing rock riprap. The Rake can also be supplied with teeth spaced at intervals wider than standard.

A brush rack is available for the ROCK RAKE as optional equipment. The brush rack increases the rake's load carrying capacity by as much as 40%.

Saw-Tooth Blade Shoes for grubbing small growth are available for the ROCK RAKE. The shoe attaches to the end of the tooth in place of the wear tip.

The ROCK RAKE is used for grubbing trees, rocks and stumps as well as raking and piling downed brush and trees. It should also be used for spreading and sizing rock riprap.

FLECO CORPORATION, JACKSONVILLE, FLORIDA, U.S.A.

FLECO OVERSEAS LIMITED, NASSAU N.P., BAHAMAS

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HEAVY DUTY CLEARING RAKE

FLECO®

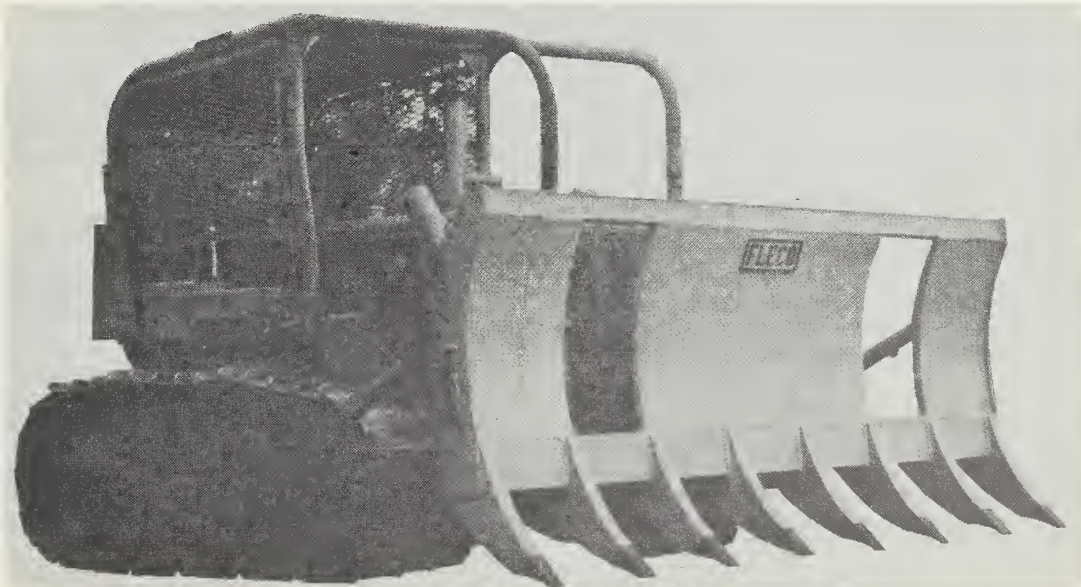
PRELIMINARY SPECIFICATIONS

NEW HEAVY DUTY CLEARING RAKE for maximum service land clearing; including tree, stump and rock removal.

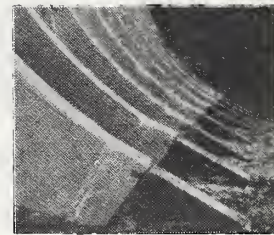
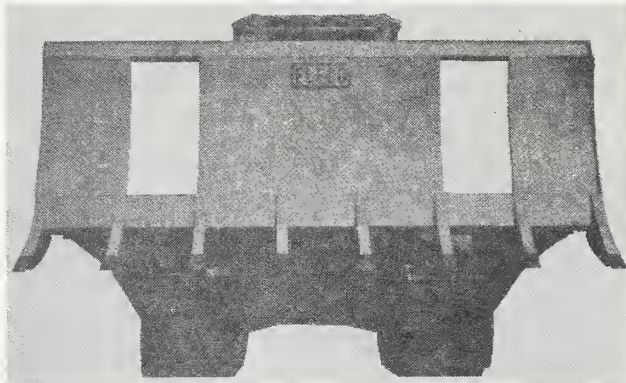
LIGHTWEIGHT, ALLOY STEEL FRAME AND TEETH provide maximum strength with minimum weight.

FORGED STEEL WEAR TIPS are replaceable. Expansion-type pin, which attaches tip to tooth, is removed with punch and hammer.

RECESSED MOUNTING POINTS attach rake close to tractor for proper balance of rake and machine.



FLECO HD CLEARING RAKE SPECIFICATIONS



FORGED TIPS

FOR USE WITH CATERPILLAR D-8, D-7, D-6, D-5, AND D-4 DOZER EQUIPPED TRACTORS

CAT TRACK TYPE TRACTOR DOZER MODEL	D-8 36A, 46A		D-7 47A, 48A		D-6 74A, 76A		D-5 82H, 84H		D-4 78A	
	8A	8S	7A	7S	6A	6S	5A	5S	4A	4S
LENGTH	12' 8"	12' 8"	12'	12'	11' 4"	11' 4"	11' 4"	11' 4"	9' 6"	9' 6"
HEIGHT	80"	80"	70"	70"	60"	60"	58"	58"	50"	50"
NUMBER OF TEETH	9	9	9	9	9	9	9	9	8	8
TOOTH LENGTH	24"	24"	23"	23"	21"	21"	20"	20"	18"	18"
OPENING BETWEEN TEETH	14½"	14½"	14"	14"	14"	14"	14"	14"	14½"	14½"
TOOTH WIDTH	3½"	3½"	3"	3"	2½"	2½"	2"	2"	1½"	1½"
WEIGHT (APPROX.) LBS.	5660	5800	3800	3900	2750	2750	2250	2250	1400	1400

GENERAL INFORMATION

The HEAVY DUTY CLEARING RAKE is new from the wear tips up. It was designed for current land clearing practices and requirements with careful consideration having been given to contractor suggestions for improving land clearing rakes. This new, unified design achieves the proper strength to weight ratio through the use of high strength, lightweight, alloy steels; which are fused together by advanced welding methods.

The HD CLEARING RAKE is a solid weldment. This single unit construction provides exceptional rigidity and strength so that maintenance is greatly reduced. Alloy steel plates, which are part of the weldment, protect the radiator and mounting area.

Mounting points are recessed into the frame of the HD CLEARING RAKE. This new design feature moves the rake closer to the tractor to insure the proper balance of rake to machine. The recessed mounting points which move the rake closer to the tractor and the improved weight to strength ratio

of this new unit make it well suited for working in mountainous areas.

Teeth are designed so that any single tooth will withstand the shock loads imposed by the tractor. The long, strong teeth of alloy steel are spaced to permit loose soil to sift through as they dig and lift stumps and rock out of the ground.

Wear tips are made of forged alloy steel, heat treated to insure internal strength while providing maximum surface hardness. The forged steel wear tips are attached to the teeth with expansion pins. A hammer and punch are the only tools needed to remove or replace the wear tips.

The HEAVY DUTY CLEARING RAKE is used for severe land clearing operations, which includes working over mountainous terrain as well as removing large trees, stumps and rocks. The HD CLEARING RAKE is available for current model D4-D8 Caterpillar track-type tractors. Contact the factory for information on rakes for non-current machines.

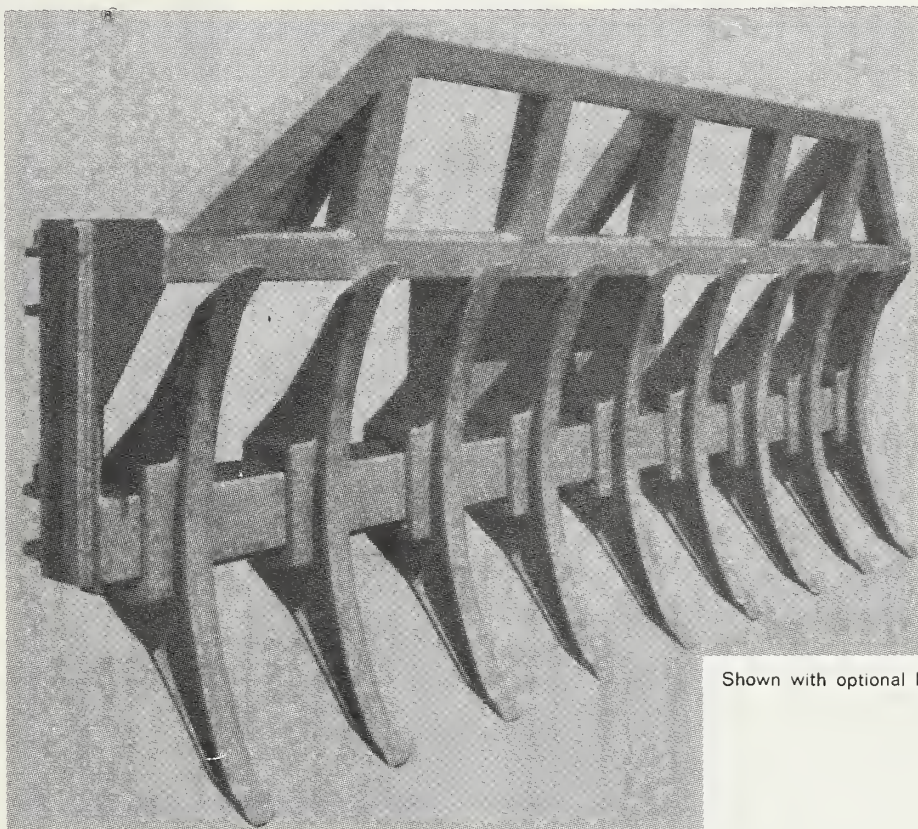
FLECO CORPORATION, Jacksonville, Florida, U.S.A.

FLECO OVERSEAS LIMITED, Nassau N. P., Bahamas

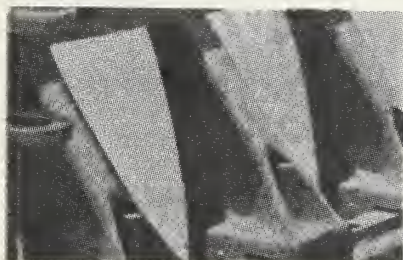
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Specifications subject to change without notice.



RF-3 RAKES



Shown with optional brush guard



No bolts to break! The unique patented locking bar/pin arrangement shows how easily teeth may be adjusted. The fact that the teeth have a small amount of lateral movement prevents stumps from jamming between the teeth and having to be chopped out. When teeth are worn, simply turn end for end. New points may be welded on when convenient.

TOUGH

Mount it and forget it! The RF-3 was designed with one goal: to increase productivity by eliminating costly downtime and aggravating small repairs. The entire rake, teeth, frame, and attaching brackets are unconditionally guaranteed for life.

VERSATILE

In addition to the exclusive guarantee above, the Rockland RF-3 rake has unique patented, adjustable and reversible teeth. Teeth may be added or removed to suit job conditions. Two or more teeth may be grouped at one end or the center for stumping.

LOW COST

Competitively priced with comparable equipment, it has features and warranty unavailable elsewhere. When all costs are considered there is only one low cost rake available — the Rockland RF-3.

SPECIFICATIONS

Caterpillar (and Other) Models	D-4	D-6	D-7	D-8	D-9
Standard Number of Teeth	7	9	9	10	11
Approximate Clear Spacing	14"	11½"	11"	11"	11"
Tooth Penetration	18"	18"	20"	20"	20"
Tooth Height	42"	42"	48"	48"	48"
Approximate Shipping Weight (lbs.)	1900	2800	4500	5100	5600
Total Height with Brush-Guard	59"	61"	64"	68"	71"
Shipping Weight with Brush-Guard (lbs.)	2200	3300	5100	5800	6400

Width of RF-3 rake is approximately equal to the width of the original blade.

The RF-3 may be ordered to any required tooth spacing. Please contact the factory for specifications on non-standard rakes.

MOUNTING INFORMATION

The RF-3 comes complete with all necessary mounting brackets to properly mount in place of the standard blade.

EXPORT CONVERSION TABLE

1 inch = 2.54 Cm.	1 mile = 1.609 Km.	1 sq. ft. = 929 Sq. Cm.	1 U.S. Gal. = 3.785 Liters
1 foot = 30.48 Cm.	1 sq. in. = 6.452 Sq. Cm.	1 sq. yd. = 0.836 Sq. Meters	1 pound = 0.453 Kg.

Specifications subject to change without notice.



ROCKLAND—THE COMPLETE ATTACHMENT LINE



ROCKLAND INC., EAST STORY ROAD
WINTER GARDEN, FLORIDA 32787

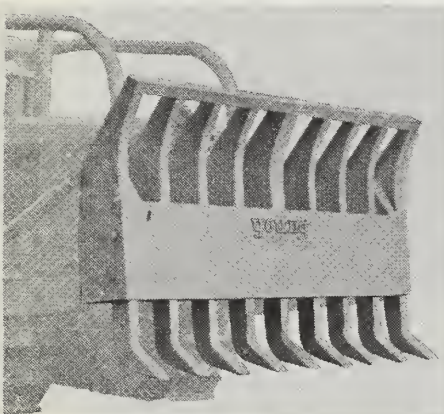


BLADE EQUIPMENT

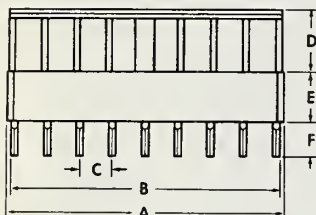
CLEARING BLADE

for Crawler Tractors—Straight or Angle Dozer

Recommended for all types of heavy duty land clearing operations, from removal of stumps, roots and rocks to brush stacking and clean-up. The blade is fitted with alloy teeth which are adjustable for the amount of ground penetration required. These teeth are correctly shaped to cut roots, get under stumps, and dislodge rocks. They are spaced to comb the soil rather than displace it. The blade is designed to mount interchangeably with the standard dozer blade. There is provision for mounting a stump splitter if required.



MODEL No. 6KB



BLADE MODEL FOR DOZER		3KB straight	3KBA angle	4KB straight	4KBA angle	5KB straight	5KBA angle	6KB straight	6KBA angle
FOR TRACTORS		IH TD9 Cat D4 AC HD6		IH TD15 Cat D6 AC HD11		IH TD20 Cat D7 AC HD16		IH TD25 Cat D8 AC HD21 Exc 82-30, 40	
Overall length	A	96	107	118	126	129	139	148	152
Clearing width	B	94	105	116	124	126	136	144 ½	148 ½
Tooth spacing	C	18½	21	19¼	21	15½	17	18	19
Brush rack height	D	15 ½		15 ½		24		30	
Blade height	E	22		22		24		24	
Tooth penetration	F	14-17		14-17		14-17-20		14-17-20	
Number of teeth		6		7		9		9	
Tooth thickness		1½		2½		3		3½	
Weight		1,890	1,982	2,900	2,983	4,880	4,995	6,510	6,583

TO ORDER — Specify (1) Young blade model number, (2) tractor make and model, (3) dozer model number, (4) type of control.

ROOT RAKE

FLECO

LAND CLEARING EQUIPMENT

RT8
RT7
RT6
RT5
RT4

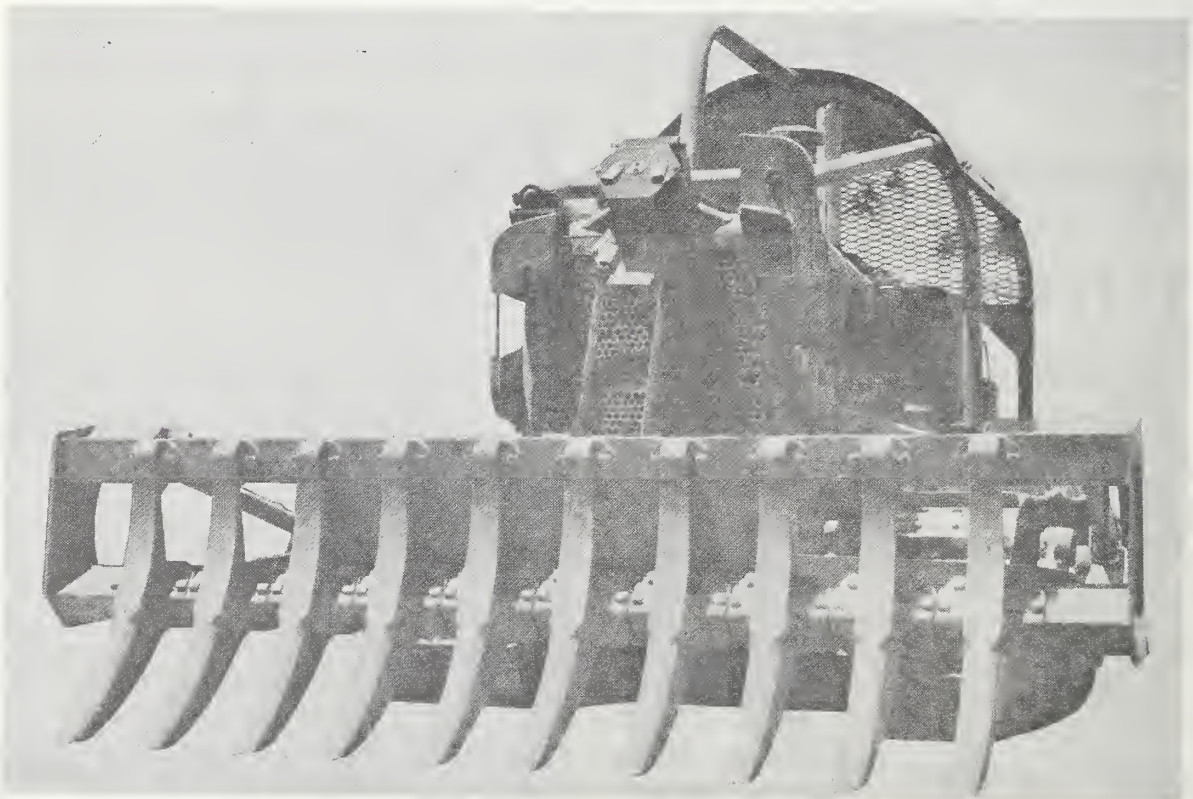
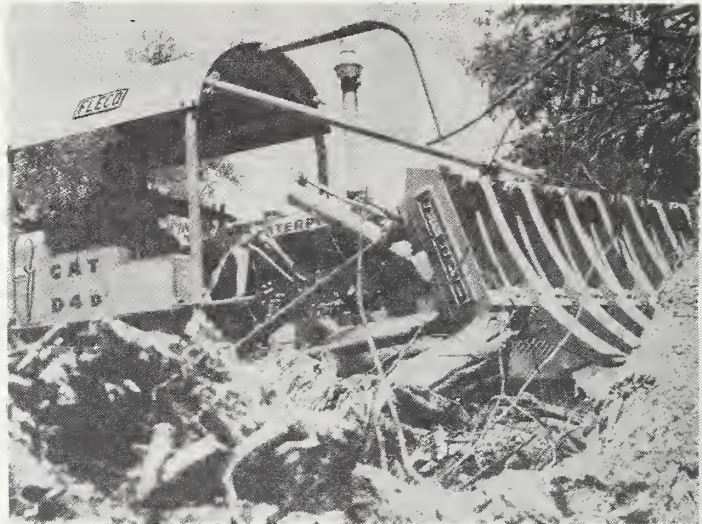
FOR PILING AND STACKING trees, brush and other debris.

CURVED TEETH give a rolling action to move large loads.

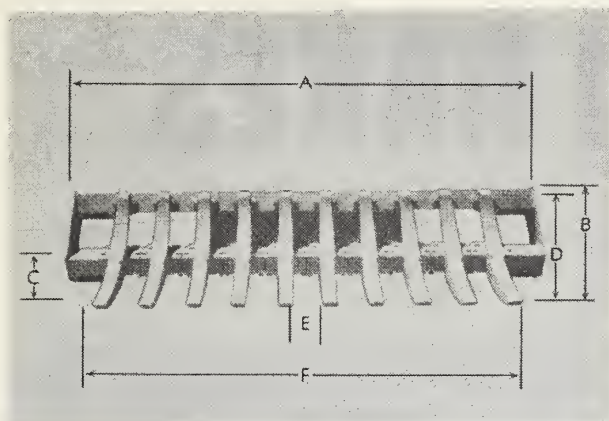
CENTER PLATE protects the radiator and tractor front.

INTERCHANGEABLE with the dozer blade, using the standard bulldozer components.

OPTIONAL FEATURES: a top rack to increase load capacity up to 40%, Saw-Tooth Blade Shoes to grub out small thick stands of brush.



FLECO ROOT RAKE SPECIFICATIONS



ATTACHMENTS:

BRUSH RACKS increase the load carrying capacity of Root Rakes by as much as 40%.

SAW-TOOTH BLADE SHOES have serrated edges to tear out growth at ground level.



TOOTH CURVATURE

FOR USE WITH CATERPILLAR D8, D7, D6, D5 AND D4 DOZER EQUIPPED TRACTORS

CAT TRACK-TYPE TRACTOR MODEL	D8 35A, 36A, 46A		D8 2U, 13A, 14A, 15A		D7 47A, 48A		D7 3T, 17A		D6 74A, 76A		D6 9U, 44A		D5 82H, 84H		D4 39A, 40A, 78A, 22C	
	8A	8S	8A	8S	7A	7S	7A	7S	6A-74"	6S-74"	6A-74"	6S-74"	5A-74"	5S-74"	4A-80"	4S-80"
A. LENGTH	14'	12'8"	12'7"	11'2"	12'8½"	11'	12'	11'2"	11'8"	11'8"	11'2"	10'2"	11'2"	10'2"	9'7¾"	8'11"
B. HEIGHT (Overall)	57"	52"	57"	51"	47½"	50"	50½"	51½"	45"	40"	40"	46"	40"	46"	38¾"	38¾"
C. MAX. TOOTH PENETRATION	22"	22"	19"	19"	19"	19"	19"	19"	21"	21"	17"	17"	17"	17"	16"	16"
D. LENGTH OF TOOTH	50"	50"	48½"	48½"	47"	47"	42"	42"	42"	42"	36"	36"	36"	36"	36"	36"
E. OPENING AT TOOTH TIPS	11"	11"	9½"	9½"	9½"	9½"	10"	10"	10¼"	10¼"	9"	9"	9"	9"	10½"	10½"
F. RAKING WIDTH (Max. Teeth)	11'3"	11'3"	10'1"	10'1"	10'1"	10'1"	10'1"	10'1"	10'7"	10'7"	9'3"	9'3"	9'3"	9'3"	7'10"	7'10"
NUMBER OF TEETH	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8	8
TOTAL HGT. WITH BRUSH RACK	75"	75"	63"	63"	63"	63"	63"	63"	57"	57"	55"	55"	55"	55"	52"	52"
*BRUSH RACK WEIGHT (Lbs.)	325	325	270	270	270	270	270	270	250	250	210	210	210	210	100	100
TOOTH WEIGHT (Lbs.)	275	275	260	260	197	235	197	197	130	130	136	136	136	136	86	86
TOTAL WEIGHT (Approx. Lbs.)	5560	5040	4460	4560	3440	4200	3625	3915	2600	2655	2365	2720	2365	2720	1505	1675

*Brush Rack available as accessory; when ordered, add to total Rake weight.

1 inch (") = 2.54 cm

1 foot (') = 0.3048m

1 pound = 0.453 kg

GENERAL INFORMATION

The ROOT RAKE is a piling and stacking attachment for use on the track-type tractor. It can carry a big load of brush or debris and thus speed clean-up work.

A center plate which is an integral part of the frame is standard equipment on the ROOT RAKE. The center plate provides protection for the radiator and front of the tractor.

The ROOT RAKE is available for all Caterpillar track-type tractors except the D-9 model. It is interchangeable with the blade, using the standard bulldozer components.

Teeth on the ROOT RAKE are curved to give a rolling action to material being moved. This rolling action helps shake dirt loose from roots and brush.

Teeth are spaced so that loose dirt falls through the openings and is not moved with the load.

A brush rack is available for the ROOT RAKE as optional equipment. The brush rack increases the Rake's load carrying capacity by as much as 40%. Saw-Tooth Blade Shoes are also available for the ROOT RAKE. The Shoe attaches to the end of the tooth in place of the wear tip.

The ROOT RAKE can be supplied with teeth spaced to a minimum of six (6) inches for special applications. It can also be supplied with teeth spaced at intervals wider than standard.

The ROOT RAKE should be used for grubbing roots and raking and piling brush and trees. It is not recommended for clearing trees or grubbing rocks and stumps.

FLECO CORPORATION, JACKSONVILLE, FLORIDA, U. S. A.

FLECO OVERSEAS LIMITED, NASSAU N. P., BAHAMAS

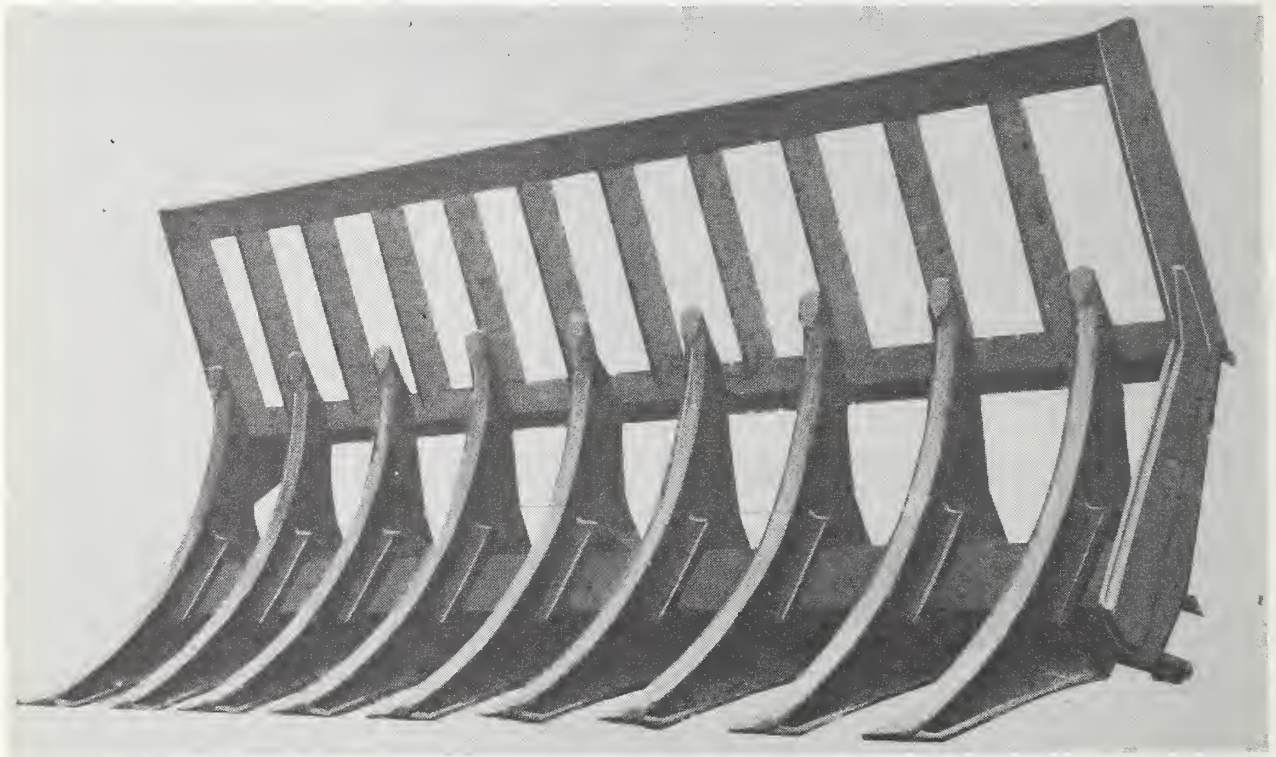
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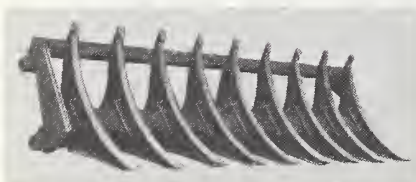
Specifications subject to change without notice.



RG-1 RAKES



Shown with optional brushguard



The RG-1 is also available without optional high piling brush guard.

MULTI-PURPOSE

The Rockland RG-1 rake is ideal for general land clearing where a severe duty unit is not required. The overall rake configuration is designed for clearing and piling. The patented cast alloy teeth are rolled back for maximum load capacity and clean windrows.

VERSATILE

The patented, adjustable and reversible teeth mean greater job flexibility. Space teeth to suit job conditions for maximum efficiency. Group or remove teeth as conditions dictate.

ECONOMICAL

The reversible teeth mean extra value. When teeth are worn, simply remove, turn end for end, and replace. New tips can be welded on when convenient. Practically two rakes for the price of one.

SPECIFICATIONS

Caterpillar (and Other) Models	D-4	D-6	D-7	D-8	D-9
Standard Number of Teeth	7	8	8	9	10
Approximate Clear Spacing	14"	12½"	12½"	12½"	15½"
Tooth Penetration	11"	11"	11"	11"	11"
Tooth Height	34"	42"	48"	48"	48"
Approximate Shipping Weight (lbs.)	1400	2200	3800	4400	5400
Total Height with Brush-Guard	50"	59"	64"	68"	68"
Shipping Weight with Brush-Guard (lbs.)	1600	2550	4250	4900	5900

RG-1 rake is approximately equal to width of original blade.
The RG-1 may be ordered to any required tooth spacing.
Please contact Rockland for specifications.

Specifications subject to change without notice.

MOUNTING INFORMATION

The RG-1 comes complete with all necessary mounting brackets to properly mount in place of the standard blade and will use standard mounting pins.

EXPORT CONVERSION TABLE

1 Inch = 2.54 Centimeters	1 sq. ft. = 929 Sq. Centimeters
1 foot = 30.48 Centimeters	1 sq. yd. = 0.836 Sq. Meters
1 mile = 1.609 Kilometers	1 U.S. Gallon = 3.785 Liters
1 sq. in. = 6.452 Sq. Centimeters	1 lb. = 0.4536 Kg.



ROCKLAND— THE COMPLETE ATTACHMENT LINE



ROCKLAND INC., EAST STORY ROAD
WINTER GARDEN, FLORIDA 32787

BLADE EQUIPMENT



Quality since 1902

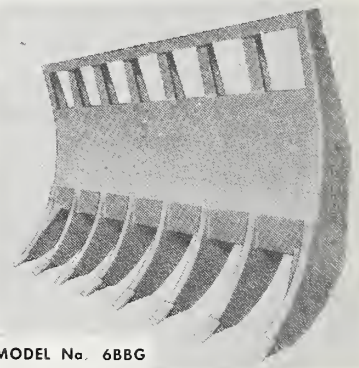
BRUSH BLADE WITH BRUSH GUARD

for Crawler Tractors—Straight or Angle Dozer

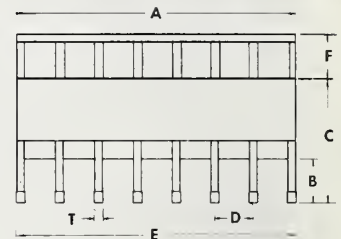
The brush guard enables the operator to carry a larger load of brush, and it gives a rolling action to the load which helps shake out the dirt. The brush guard also provides added protection for tractor and operator.

BLADE MODEL FOR DOZER	3BBG straight	3BBGA angle	4BBG straight	4BBGA angle	5BBG straight	5BBGA angle	6BBG straight	6BBGA angle
FOR TRACTORS	IH TD9 Cat D4D AC HD6		IH TD15 Cat D6C AD HD11		IH TD20 Cat D7E AC HD16		IH TD25 Cat DBH AC HD21 Euc B2-30, 40	
Blade length A	95 1/4	107	117 1/2	126	128 1/2	139	148	152
Tooth penetration B	15 1/4	15 1/4	16 3/4	16 3/4	18 3/4	18 3/4	20 3/4	20 3/4
Frame height C	41	41	49 1/2	49 1/2	54	54	56	56
Tooth spacing D	18 3/4	21	19 1/4	21	21	23	20	21
Raking width E	96	108	118 3/8	127	130	140 1/2	149	153
Brush guard height F	14	14	16	16	16	16	16	16
Number of teeth	6	6	7	7	7	7	8	8
Width of tooth point T	2 1/4	2 1/4	2 7/8	2 7/8	3 7/8	3 7/8	3 7/8	3 7/8
Weight	1,105	1,303	2,850	2,248	3,360	3,220	4,790	4,425

TO ORDER — Specify (1) Young blade model number, (2) tractor make and model, (3) dozer model number, (4) type of control.



MODEL No. 6BBG



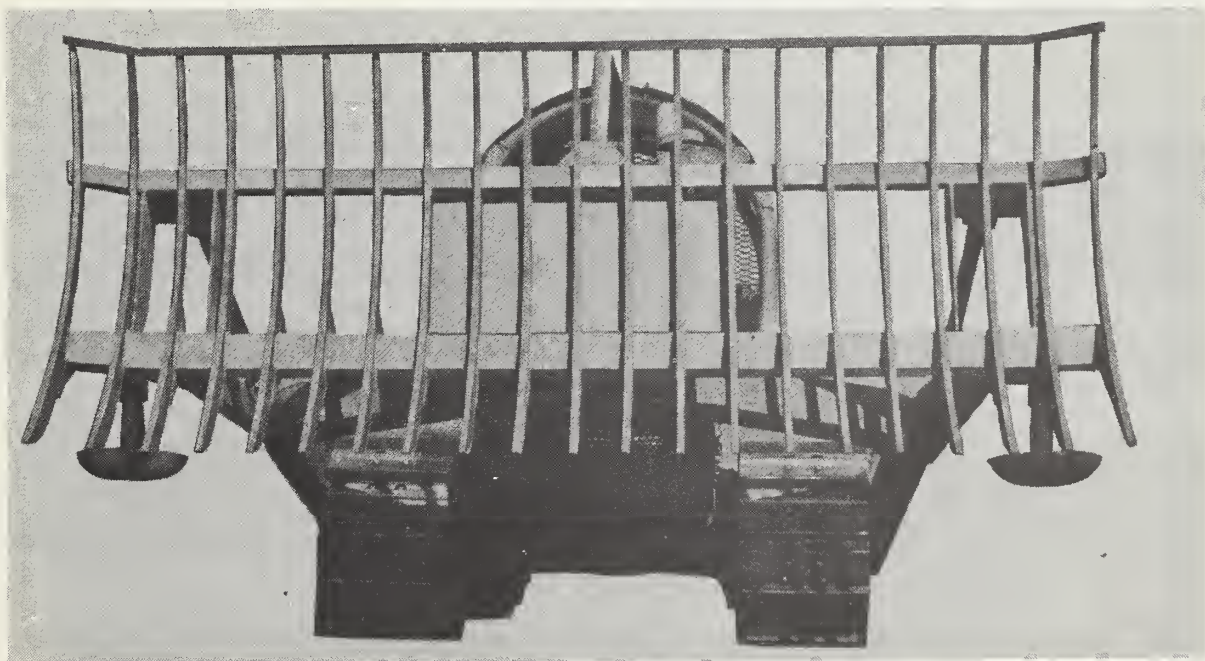
BRUSH & CLEAN-UP RAKE

FLECO

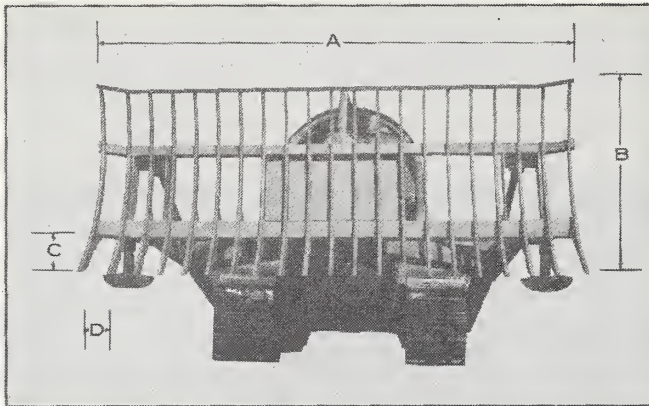
LAND CLEARING EQUIPMENT

BC 8
BC 7
BC 6
BC 4

- CLOSE SPACED TEETH GATHER SMALL BITS AND PIECES OF DEBRIS — REDUCING OR ELIMINATING THE NEED FOR HAND LABOR.
- EXTRA WIDTH AND HEIGHT MEAN EXTRA BIG LOADS CAN BE RAKED TO WINDROWS — SPEEDING PRODUCTION.
- HIGH-STRENGTH ALLOY STEEL CONSTRUCTION GIVES GREATER STRENGTH — AT MUCH LESS WEIGHT.
- SKID SHOES, WITH FIVE DEPTH SETTINGS, GIVE FLOATING ACTION OVER ROUGH TERRAIN AND PREVENT DIG-IN.



FLECO BRUSH & CLEAN-UP RAKE SPECIFICATIONS



WINGS FUNNEL MATERIAL INTO THE
MAIN PORTION OF THE RAKE.

FOR USE WITH CATERPILLAR D8, D7, D6 AND D4 DOZER EQUIPPED TRACTORS

TRACTOR MODEL	D8	D8 2U	D7	D7	D6	D6	D4
	35A, 36A, 46A	13A, 14A, 15A	47A, 48A	3T, 17A	74A, 76A	9U, 44A	(ALL)
A. Length	14' 9"	14' 5"	14' 5"	13' 6"	13' 6"	12' 5"	12'
B. Height	6' 7"	5' 10"	5' 10"	5' 4"	5' 4"	5' 4"	4' 8"
C. Maximum Tooth Penetration	16"	16"	16"	16"	16"	16"	16"
D. Distance Between Teeth	7½"	7½"	7½"	7½"	7½"	7½"	7½"
Number of Teeth	21	21	21	20	20	19	18
Skid Shoe Adjustment	0-10"	0-10"	0-10"	0-10"	0-10"	0-10"	0-10"
Total Weight Lbs. (Approx.)	6,700	4,000	3,950	3,200	3,000	2,300	1,850

1 inch (") = 2.54 cm

1 foot (1') = 0.3048m

1 pound = 0.453 kg

GENERAL INFORMATION

The FLECO BRUSH & CLEAN-UP RAKE picks up debris and brush other tools leave behind. It is engineered and built specifically for fine clean-up work after clearing on dam or reservoir sites and other general clearing projects which usually require hand labor for final clean-up.

The RAKE construction is of high-strength, lightweight alloy steel materials. These special steels allow the RAKE to have extra width and additional close-spaced teeth, yet remain light and strong. Extra width means extra big loads can be carried in the RAKE. Close spaced teeth sift the soil while gathering small bits and pieces of debris.

The BRUSH & CLEAN-UP RAKE has wings on each end which extend forward and to the sides. These wings funnel material, which often sheds off to the sides of a straight type rake, into the main portion of the BRUSH & CLEAN-UP RAKE.

Skid shoes, which permit the RAKE to skim material at ground level, are furnished as standard equipment. The skid shoes have five adjustments which allow raking at two-inch increments to a depth of ten inches. The RAKE can be set to work as deep as sixteen inches by removing the skid shoes.

A center plate helps protect the radiator and tractor front on all model BRUSH & CLEAN-UP RAKES. The high sweep of the teeth forms a brush rack to increase the RAKE'S capacity and to keep debris rolling in front of the tractor. A center plate for the brush rack is available as optional equipment.

RECOMMENDATIONS

The BRUSH & CLEAN-UP RAKE is recommended for final clean-up after clearing on dam or reservoir sites and other general clearing projects. Its extra big load-carrying capacity and ability to rake up small limbs and debris give added production and reduce over-all clearing costs.

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FLECO OVERSEAS LIMITED, NASSAU N.P., BAHAMAS

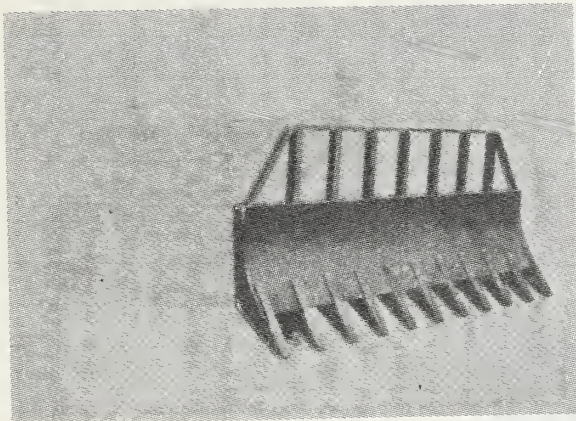
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Specifications subject to change without notice.

BRUSH RAKE

FLECO

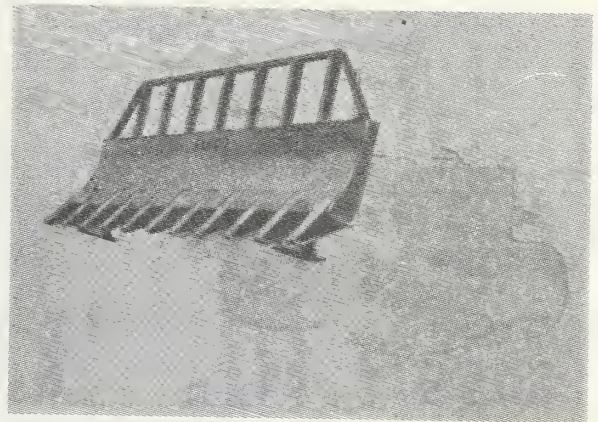
LAND CLEARING EQUIPMENT

BR8
BR7
BR6
BR4

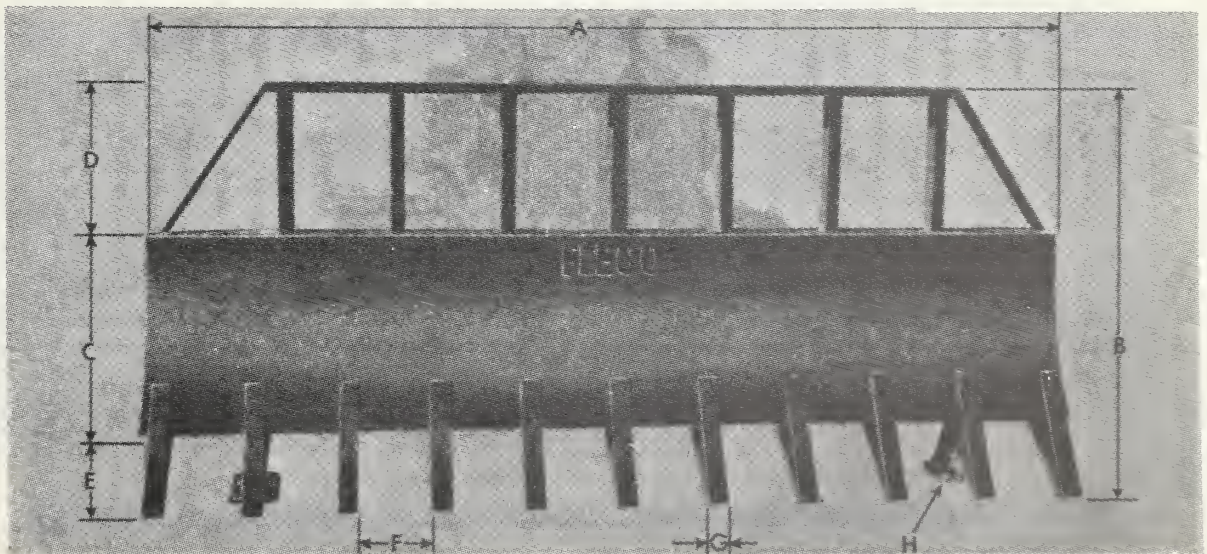


Adjustable Skid Shoes for controlled tooth penetration on all Brush Rakes.

This Rake has a built-in Brush Rack for additional load carrying capacity.



Extra Wide Raking Width for Piling and Stacking



FOR USE WITH CATERPILLAR D8, D7 AND D4 DOZER EQUIPPED TRACTORS

CAT TRACK TYPE TRACTOR MODEL	D8*		D7		D6				D4			
	8A	8S	7A	7S	6A-74"	6S-74"	6A-60"	6S-60"	4A-60"	4S-60"	4A-44"	4S-44"
A Length	14'	14'	12'4"	12'4"	11'2"	11'2"	11'2"	11'2"	9'7"	9'7"	9'7"	9'7"
B Height	5'10"	5'10"	5'10"	5'10"	5'6"	5'6"	5'6"	5'6"	4'8"	4'8"	4'8"	4'8"
C Moldboard Height	2'10"	2'10"	2'10"	2'10"	2'10"	2'10"	2'10"	2'10"	2'3"	2'3"	2'3"	2'3"
D Top Guard Height	1'10"	1'10"	1'10"	1'10"	1'6"	1'6"	1'6"	1'6"	1'6"	1'6"	1'6"	1'6"
No. Teeth	11	11	10	10	9	9	9	9	9	9	9	9
E Tooth Length	1'4"	1'4"	1'4"	1'4"	1'4"	1'4"	1'4"	1'4"	1'1"	1'1"	1'1"	1'1"
F Opening Between Teeth	12 1/4"	12 1/4"	12 1/2"	12 1/2"	13"	13"	13"	13"	10"	10"	10"	10"
G Tooth Width	3 1/2"	3 1/2"	3 1/4"	3 1/4"	3"	3"	3"	3"	3"	3"	3"	3"
H Adjustable Skid Shoe Width	10"	10"	10"	10"	10"	10"	10"	10"	8"	8"	8"	8"
Length	1'8"	1'8"	1'8"	1'8"	1'8"	1'8"	1'8"	1'8"	1'4"	1'4"	1'4"	1'4"
Vertical	1 3/4"	1 3/4"	1 3/4"	1 3/4"	1 3/4"	1 3/4"	1 3/4"	1 3/4"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
Angular	6°	6°	6°	6°	6°	6°	6°	6°	5°	5°	5°	5°
Weight (Approx.) Lbs.	4379	4439	3389	3614	2609	2849	2554	2794	2179	2219	2079	2119

*Brush Rakes are not available for D8 Tractors above the 2U Series.

Materials and specifications subject to change without notice

1 inch (")=2.54 cm

1 foot (')=0.3048 m

1 pound=0.453 kg

GENERAL INFORMATION

FLECO BRUSH RAKES are interchangeable with the moldboard on both the angle and straight type bulldozer arrangements. The moldboard is detached from the bulldozer arrangement and the Rake is mounted in its place by using the original bulldozer components. Rakes can be mounted on practically all makes and models of bulldozer equipment.

The teeth are manganese carbon steel castings, heat-treated for maximum strength and wear. The teeth are welded in place and designed to pile brush, roots and trees and permit loose soil to sift through.

The adjustable support shoes regulate the penetration of the teeth. The Brush Rack on the Rake is welded in place and permits larger loads when piling and stacking.

FLECO BRUSH RAKES are available for use with angle and straight type bulldozer arrangements

mounted on 2U D8, D7, D6 and D4 Tractors (or comparative models in other makes). BRUSH RAKES are not available for D8 Tractors above the 2U series. Rock Rakes or M-A Rakes should be used on 13A, 14A and 15A series D8 Tractors and M-A Rakes on the D8 H.

RECOMMENDATIONS

The FLECO BRUSH RAKE is recommended on operations of general land clearing for piling, stacking and is **not recommended for grubbing**.

The FLECO M-A Rake or Rock Rake is recommended for use in rock, boulder clearing and operations requiring an extra heavy duty Rake.

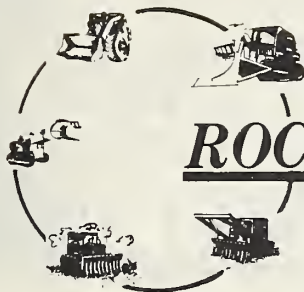
The FLECO Detachable Stumper, Pull Stumper, Treedozer and Tree Cutter are recommended for use in stumping and tree removal operations.

FLECO

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ROCKLAND

CONSTRUCTION
EQUIPMENT
• DIVISION

TRACTOR ATTACHMENTS

JOB-PROVEN EQUIPMENT

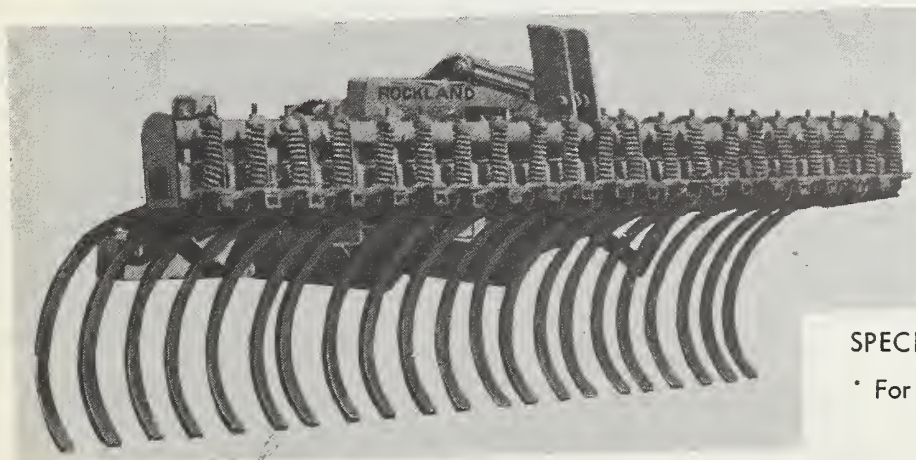
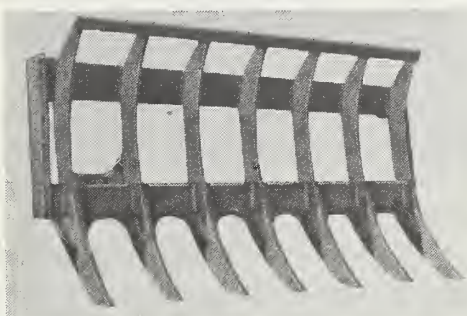
MATCHED TO:



ST RAKES

ST STACKING RAKE

- For follow up clearing behind Cutting Blades



SPECIAL SPRING TOOTH RAKE

- For Light Clean-Up Work

ROCKLAND

attachments



CONVERSION TABLE

1 in.	2.54 Centimeters	1 cu. ft.	.929 Sq. Centimeters
1 ft.	30.48 Centimeters	1 cu. yd.	0.765 Sq. Meters
1 mi.	1.609 Kilometers	1 U.S. Gallon	3.785 Liter
1 sq. in.	6.452 Sq. Centimeters	1 U.S. Gallon	0.233 Imp. Gals.

Form No. 17 IH
(Rep. 15 & 21-20)

SPECIFICATIONS FOR ROCKLAND ST STACKING RAKE

TRACTOR MODEL (all series)	TD-6	TD-9	TD-15	TD-20	TD-25
	----	150	175	250	-----
HOUGH TRACTORS (all series)	----	30	50, 60, 65	70, 90	100, 120
	----	----	D-90	D-100	D-120
Spacing between Teeth	14"	14"	16"	20"	20"
Clear Penetration	18"	18"	18"	24"	24"
Rake Height	60"	60"	60"	78"	78"
Approx. Shipping Weight	900#	1600#	1950#	3400#	4800#

ROCKLAND Model ST STACKING RAKE has been designed for follow-up clearing, raking and piling, after trees and brush have been cut by other types of attachments, such as ROCKLAND Shear Blades or V Cutting Blades. Teeth are curved and of extra long length to carry the greatest possible load the tractor can push up into the fire line pile or windrow. When heavy clearing is encountered ROCKLAND Model RF-3 Rake should be used. Note, the height of the ST Rake requires no Brush Guard.

SPECIFICATIONS FOR ROCKLAND SPRING TOOTH RAKE

THIS IS SOMETHING NEW - A SPRING TYPE, FRONT MOUNTED RAKE FOR CRAWLER AND RUBBER-TIRED TRACTORS. Use it for fine clean-up work - eliminate hand labor - leaves your land ready for planting.

If your tractor is now equipped with a ROCKLAND, or similar, Tool Bar, you may order just the teeth for mounting on the Tool Beam Carrier. In this way they may be used Front or Rear Mounted. FOR PRICE AND SPECIFICATION INFORMATION YOU MUST SUBMIT THE FOLLOWING INFORMATION: Tractor Make and Model; Present Attachment now on Tractor; Serial Number, Cable or Hydraulic Operated. It will also be helpful if you will detail type of debris you wish to clean-up.

This is where
you get your ROCKLAND
PRODUCTS . . .

telephone 656-4443

area code 305 40

cable address . . .

Printed in U.S.A.

Rockland reserves the right to make changes in specifications and/or to make improvements at any time without obligation or notice.

ROCKLAND

BLADE RAKE

FLECO

LAND CLEARING EQUIPMENT

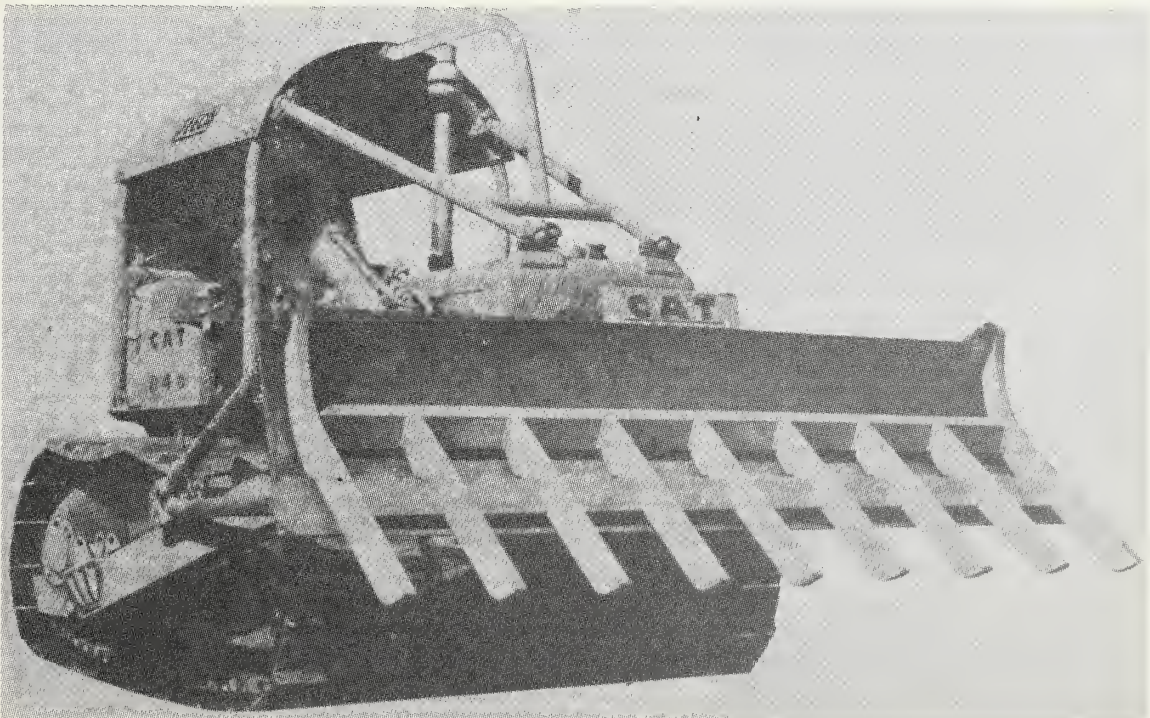
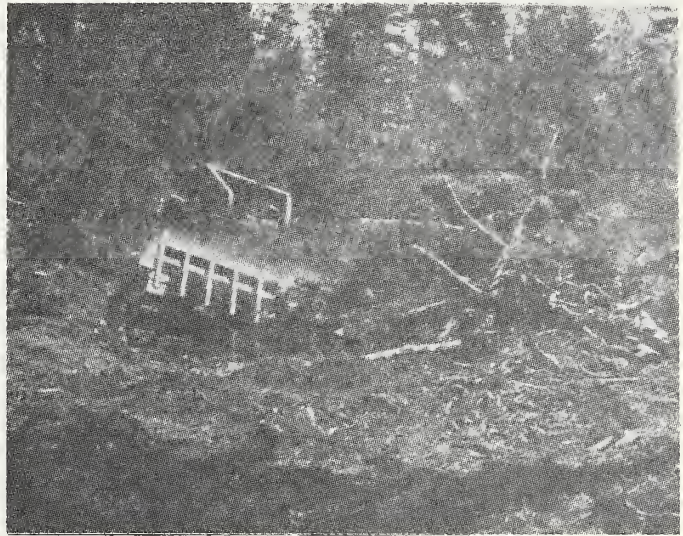
BL8
BL7
BL6
BL5
BL4

HIGH STRENGTH, ALLOY STEEL materials provide maximum strength with minimum weight.

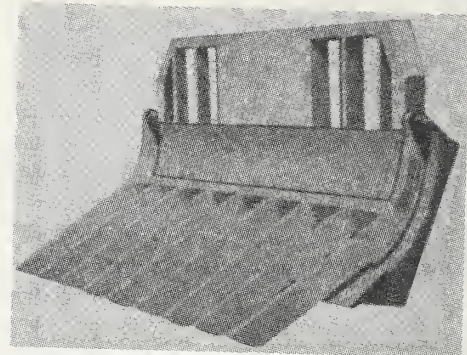
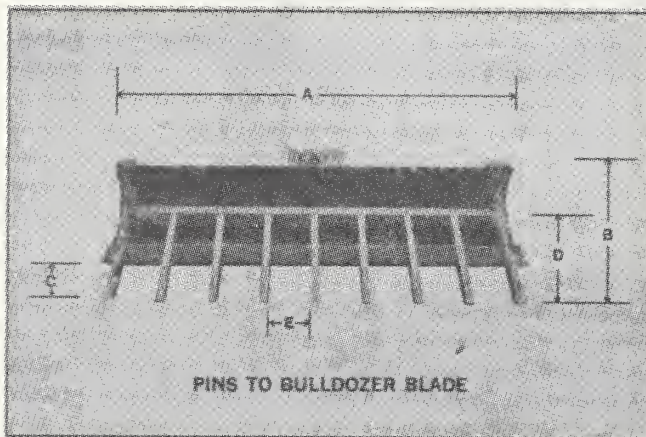
QUICK CHANGE from blade to rake or back to the blade. Rake pins to the bulldozer blade with two pins for speedy attachment or removal.

EASILY INSTALLED by welding two sets of mounting brackets to the top of the bulldozer blade. Mounting brackets do not interfere with normal operation of the bulldozer blade.

AVAILABLE FOR CATERPILLAR D4 through D8 track-type tractors.



FLECO® BLADE RAKE SPECIFICATIONS



BRUSH RACKS, WHICH WELD TO THE TOP OF BULLDOZER BLADES, ARE AVAILABLE AS OPTIONAL EQUIPMENT FOR USE WITH BLADE RAKES.

FOR USE WITH CATERPILLAR D8, D7, D6, D5 AND D4 DOZER EQUIPPED TRACTORS

CAT TRACK TYPE TRACTOR MODEL	D8 35A, 36A, 46A		D8 13A, 14A, 15A		D8 2U & 8R		D7 47A & 48A		D7 17A & 3T		D6 10K, 74A, 76A, 99J		D6 44A & 9U		D5 82H, 84H, 94J & 96J		D4 22C, 40A, 78A, 82J, 83J & 7U	
	8A	8S	8A	8S	8A	8S	7A	7S	7A	7S	6A	6S	6A	6S	5A	5S	4A	4S
A. Length - Raking Width	13'	9'8"	11'9"	10'	12'	9'6"	12'1"	9'7"	11'4"	8'7"	10'8"	8'6"	10'5"	8'7"	10'5"	8'7"	9'1"	7'
B. Height	60"	67"	62½"	66"	55"	61"	54"	63"	53"	59"	50"	60"	47"	52"	47"	52"	39"	45"
C. Max. Tooth Penetration	22"	22"	20"	20"	20"	20"	22"	21"	18"	18"	18"	18"	15"	16"	15"	16"	15"	15"
D. Length of Tooth	33"	33"	33"	33"	33"	31"	33"	31"	29"	30"	30"	31"	25"	26"	25"	26"	24"	23"
E. Opening at Tooth Tip	16½"	13 5/8"	15"	14"	15"	13"	15"	14"	15"	12"	13"	13"	13"	12"	13"	12"	12"	10"
Number of Teeth	9	8	9	8	9	8	9	8	9	8	9	8	9	8	9	8	9	8
*Brush Rack Weight(Lbs.)	540	350	540	350	515	325	530	375	480	410	465	315	385	325	385	325	180	160
Total Weight(Approx. Lbs.)	2780	2390	2500	2160	2310	2065	2450	2190	1860	1605	1590	1460	1270	1160	1270	1160	730	690

*Brush Rack available as accessory; when ordered, add to total Rake weight.

1 inch (") = 2.54 cm

1 foot (1') = 0.3048m

1 pound = 0.453 kg

GENERAL INFORMATION

The FLECO BLADE RAKE is a rugged, lightweight land clearing attachment for the bulldozer blade. Two (2) pins attach the Blade Rake to the bulldozer blade. This simple, pin-type mounting has a number of important advantages other methods of attachment do not offer. Of primary importance is the reduction in downtime obtained when the rake is attached or removed from the blade. In addition the pin-type mounting allows the rake to swing away from the blade. This "swing" action prevents material from being dragged back from the windrow. When the tractor is moving in reverse a cleaning effect is obtained as the rake swings away from the blade. The BLADE RAKE is available for angle and straight type bulldozer arrangements of D4 through D8 class tractors.

Two (2) sets of mounting brackets must be welded to the top of the bulldozer blade before the BLADE RAKE is installed. The mounting brackets are supplied with the BLADE RAKE.

The frame and teeth of the BLADE RAKE extend the full length of the bulldozer blade. Teeth extend as much as

twenty inches (on some models) below the blade to insure good penetration into the soil for clean raking and stacking.

The FLECO BLADE RAKE is constructed of high strength alloy steel. This high strength steel is light, strong and durable. The Rake frame is designed to fit flush against the bulldozer blade for maximum support.

The BLADE RAKE is easy to transport or move. Pinned to the bulldozer blade, it can be carried on the tractor.

Special tooth spacing is available on order. Contact the factory for information on BLADE RAKES with special tooth spacing.

RECOMMENDATIONS

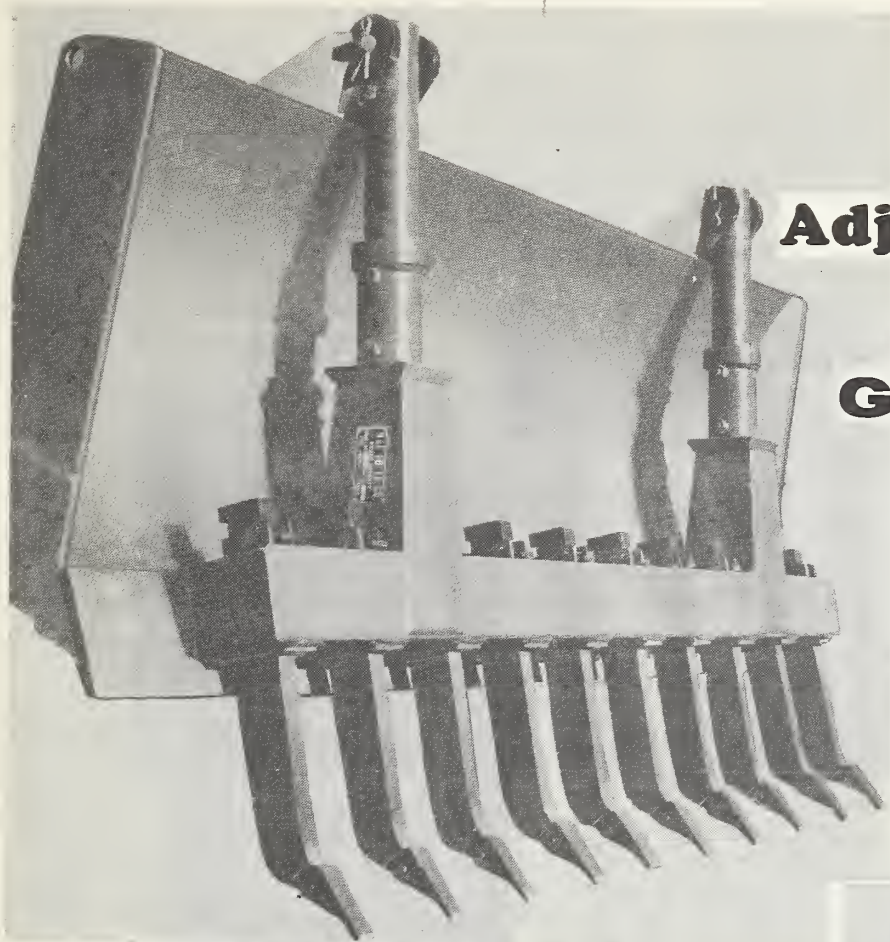
The BLADE RAKE is recommended for light grubbing, piling and raking. Do not use the BLADE RAKE for heavy duty clearing such as removing trees, stumps and rocks.

FLECO MA (MULTIAPPLICATION) RAKES and ROCK RAKES are available for heavy duty land clearing work.

FLECO CORPORATION, JACKSONVILLE, FLORIDA, U.S.A.

FLECO OVERSEAS LIMITED, NASSAU N.P., BAHAMAS

Fleco is a Registered Trademark of Fleco Corporation
Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.
Specifications subject to change without notice.



H&L

Adjustable Arm

BRUSH GRUBBER

Model 8-AA-2

Arms telescope with 18" adjustment

New heavy-duty telescoping arms allow Brush Grubber adjustments to dozer blades of heights from 34" to 55 inches. This new versatility allows wider tractor usage and greater Brush Grubber availability. Readily available to perform the many and varied assignments for which the Grubber has proven to be a valuable attachment.

Adjustable to the following Bulldozers:

ALLIS CHALMERS

HD-11-B & E, 11-HS, 11-HA, 11-CS, 11-CA, HD-16, 16-HS, 16-HA, 16-CS, 16-CA, HD-21, 21-HS, 21-HA, 21-CS, 21-CA

CATERPILLAR

D-6A, D-6S 74" ga.
D-7S, D-7A, D-8S, D-8A

EUCLID

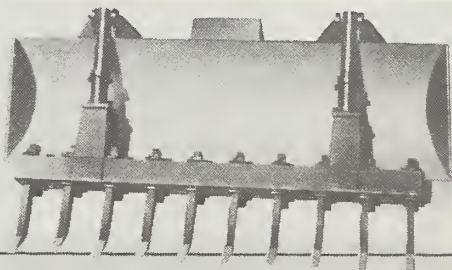
82-30 (C-6) Semi U, Straight and Angle
82-40 Semi U and Angle

INTERNATIONAL

TD-15-151-S, 151-A TD-20-201-S, 201-A
TD-25-250-S, 251-A

OTHER MAKES

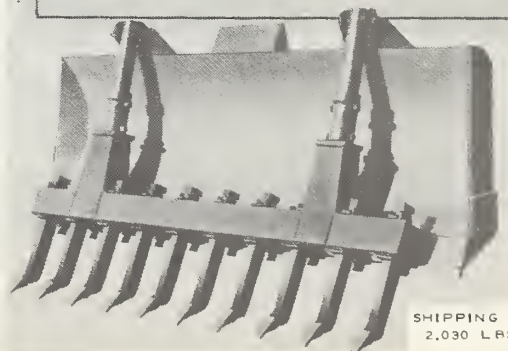
Fits blade height from 34" to 55"



SPECIFICATION

10 G-374-24 Shanks, 12" c to c spacing. Width over points 110", overall width 115½".

Mounting brackets are mounted on top cross frame of main body of bulldozer blade, if blade has "false" top, the mounting brackets are inserted in it.



H&L

TOOTH COMPANY

1540 So. Greenwood Ave.
Montebello, California 90640

Pat. Nos. 2568075, 2669153, 2632261, and other patents pending.

FORM BG-3/67

CLEARING AND RIPPING

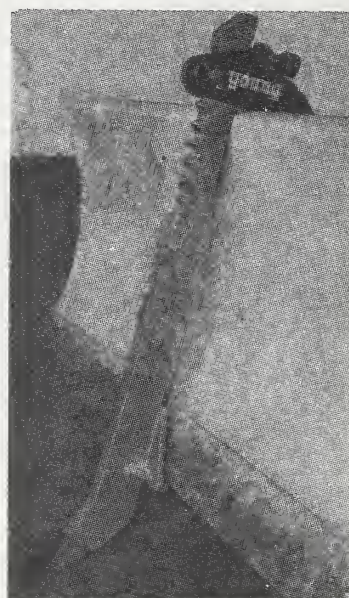


Quality since 1902

UTILITY DOZER TOOTH

A low cost, ruggedly built utility ripping tool which can be used to remove stumps, roots or rocks, and to rip up hardpan. Made in 5 sizes, to fit any straight dozer blade. The Young dozer tooth can be mounted or unmounted in minutes by the use of the simple, positive clamp. Several teeth mounted side by side offer an economical method of converting a dozer blade into a brush rake. The one-piece shank is of heat treated alloy steel. The replaceable H&L tooth point is long wearing, low in cost, obtainable anywhere.

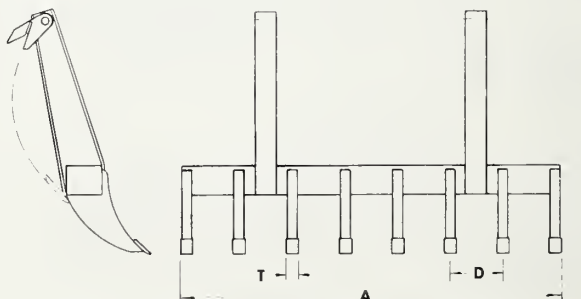
DOZER TOOTH MODEL	1A	2A	3A	4A	5A
FITS DOZER BLADE HEIGHT	20" to 28"	24" to 34"	30" to 40"	36" to 46"	42" to 52"
FOR TRACTOR SIZE (drawbar pull, maximum)	9,000	15,000	21,000	30,000	42,000
SHANK MATERIAL	heat treated alloy steel				
REPLACEABLE POINT NO.	H&L 22	H&L 24	H&L 25	H&L 27	H&L 27
DIGGING DEPTH	10"	13"	15"	17"	20"
WEIGHT	55	100	195	335	515



DETACHABLE RAKE FRONT

The new Young Detachable Rake Front is basically designed for the contractor who is faced with the problem of a minor volume of brush removal from the job-site. It takes care of raking, brush piling, scarifying and light brush and undergrowth removal. Not recommended for heavy land clearing such as removing trees, stumps or rocks. Available with our Standard Points or with replaceable H&L points.

DRF MODEL NO.	3DRF	4DRF	5DRF	6DRF
FOR TRACTORS	IH TD9 Cat D4D AC HD6	IH TD15 Cat D6C AC HD11	IH TD20 Cat D7E AC HD16	IH TD25 Cat D8H AC HD21 Euc 82-30, 40
Rake length A	84	100	108	120
Tooth penetration B	15 1/4	16 3/4	18 3/4	20 3/4
Tooth spacing D	16 1/2	16 1/4	15	16 1/4
Number of teeth	6	7	8	8
Width of tooth point T	2 1/4	2 7/8	3 7/8	3 7/8
Weight	982	1,372	2,295	3,100



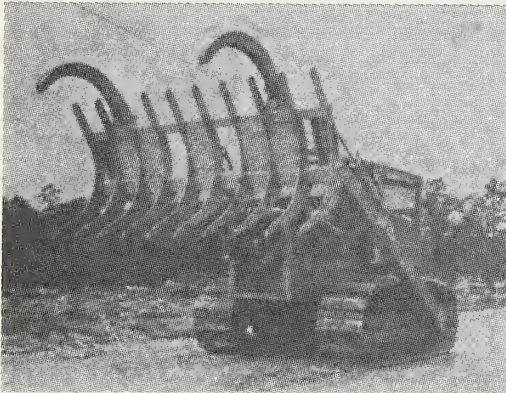
Mounts on the standard dirt moldboard by the use of two pins, which attach the thrust arms to the weld-on brackets. Once the weld-on brackets are installed, one man can attach or remove the Rake Front in a few minutes. The Rake Front is hinged at the top, and swings out from the moldboard to release debris while backing up.

NEW TRACTOR STACKER RAKE

A new type Fleco "C" frame for high lifting is furnished with the Stacker Rake.

This special "C" frame is designed specifically for high piling and loading. Optional hydraulic clamps are available for the Stacker Rake. The Stacker Rake with Clamps can pick up and hold trees, roots and debris. The clamps also help compact brush loads.

The new Stacker Rake is designed for raking, stacking and loading. It is not recommended for grubbing.



BRIEF SPECIFICATIONS

CAT TRACK-TYPE TRACTOR MODEL	D7		D6
	47A, 48A	17A, 3T	74A, 76A
Overall Height	12' 2"	11'	11'
Overall Width	60"	54"	54"
Tooth Tip to Ground (Up Position)	82"	77"	77"
Tooth Tip to Ground (Dump Position)	36"	32"	32"
Tooth Length	42"	38"	38"
Number of Teeth	11	10	10
No. of Teeth with Clamps	8	7	7
Tooth Openings	13"	13½"	13½"
Tooth Openings with Clamps	19"	21"	21"
Clamp Openings (Max.)	70"	65"	65"
Weight	4900	4150	4000
Weight With Clamps	5500	4550	4400

STACKER RAKES will soon be available for all model Caterpillar track-type tractors. The Stacker Rake requires that the tractor be equipped with a two valve hydraulic control system. A three valve control system is required for the Stacker Rake with Clamps.

Counter weight may be necessary if tractor is not equipped with rear mounted ripper or winch. Counter weight boxes to accommodate concrete are available for tractors not counter weighted.

Specifications are subject to change without notice.

ROME K/G® CLEARING BLADE

Series KG (with Rome C-Frame)
Series KGA (for Caterpillar C-Frames)

ROME®

**SERIES
KG and KGA**

ROME PLOW COMPANY, Cedartown, Georgia



1. Sharp stinger splits large jungle tree.



2. Tree falls—stump will be cut to ground level.



3. Cuts stumps clean and smooth—flush with ground.



4. Tilted blade grubs out stumps and roots.



Piles compact, dirt-free windrows which dry fast—burn easily.

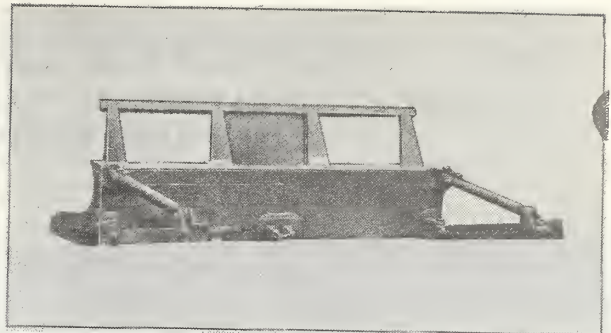
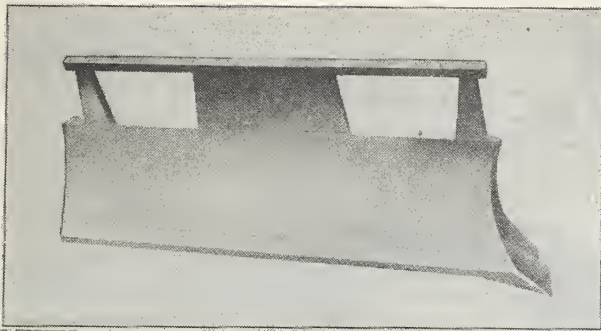
- CUTS TREES AT GROUND LEVEL OR BELOW
- PILES CUT TREES AND BRUSH COMPACTLY

The ROME K/G® CLEARING BLADE is faster and more economical because only one tool is used to cut and windrow. It has cut trees 81" in diameter and larger under actual field conditions.

Large trees are felled by first splitting and weakening with the sharp stinger, then shearing with the angled cutting edge. Stumps are sheared off at or below ground level. A wide swath of small trees and heavy brush can be cut at ground level in one continuous pass. The guide bar above the blade helps keep the working area clear of cut trees.

The ROME K/G® CLEARING BLADE is superior for clearing reservoirs, lake sites, rights-of-way, rangelands . . . in fact, wherever land clearing is required. It is also ideal for building woods roads, firebreaks, and V-type drainage ditches in woods or open fields.

Routine maintenance consists of an occasional sharpening of the stinger and cutting edge with a portable grinder. Cutting edges are replaceable. A heavy duty cab guard is required on the tractor.



SERIES KGA FOR CATERPILLAR TRACTORS EQUIPPED WITH CATERPILLAR BULLDOZER C-FRAMES

SPECIFICATIONS

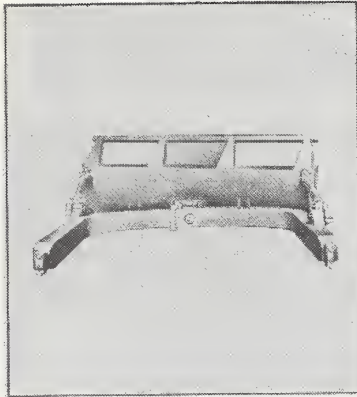
Catalog Number	DESCRIPTION	Overall Length Trunnion to Stinger Tip	Overall Width Mounted	Height	Net Wt. (Lbs.)
For Caterpillar D4 Tractors Equipped with Bulldozer C-Frame					
KGA4 consisting of: KG4100 Blade Assembly KAD4D Brace Group	For Caterpillar D4D and earlier Tractors (60" Gauge) equipped with Cat C-Frame Group No. 4J1094, 5J6098 or 5J7379	14' 9"	8' 11 1/2"	4' 4 1/2"	1985 1520 465
For Caterpillar D5 and D6 Tractors Equipped with Bulldozer C-Frame					
KGA6B consisting of: KG6100C Blade Assembly KAD6A Brace Group	For Caterpillar D5 Tractors (74" Gauge) equipped with Cat C-Frame Group No. 6J679, and Caterpillar D6 or D6B Tractors (74" Gauge) equipped with Cat C-Frame Group No. 8F8912	15' 6"	10' 4 1/2"	4' 4 1/2"	2905 2280 625
KGA6C consisting of: KG6100B Blade Assembly KAD61A Brace Group	For Caterpillar D6C Tractors (74" Gauge) equipped with Cat C-Frame Group No. 3J4615	15' 9 1/2"	10' 4 1/2"	4' 4 1/2"	2935 2280 655
For Caterpillar D7 Tractors Equipped with Bulldozer C-Frame					
KGA7D consisting of: KG6100B Blade Assembly KAD7A Brace Group	For Caterpillar D7 Tractors, Serial No. 3T, 7M and 17A, equipped with Cat C-Frame Group No. 8F8913	16' 2 1/2"	10' 4 1/2"	4' 4 1/2"	3050 2280 770
KGA7E consisting of: KG7100E Blade Assembly KAD7E Brace Group	For Caterpillar D7E Tractors equipped with Cat C-Frame Group No. 5J5634 or 2J8606	18' 7"	11' 2"	5' 1"	4945 3720 1225
For Caterpillar D8 Tractors Equipped with Bulldozer C-Frame					
KGA8F consisting of: KG7100E Blade Assembly KAD8F Brace Group	For Caterpillar D8 Tractors Serial Nos. 2U, 14A and 15A with Cat C-Frame Group No. 4F7559 or 1J6831	18' 11"	11' 2"	5' 1"	4820 3720 1100
KGA8I consisting of: KG8100CA Blade Assembly KAD8I Brace Group	For Caterpillar D8H Tractors equipped with Cat C-Frame Group No. 3J6606, 3J3840 or 3J3516	21' 4"	12' 4"	5' 4"	7050 5540 1510
KGA8H consisting of: KG8100CA Blade Assembly KAD8H Brace Group	For Caterpillar D8H Tractors equipped with Cat C-Frame Group No. 2J2457	21' 4"	12' 4"	5' 4"	7080 5540 1540
For Caterpillar D9 Tractors Equipped with Bulldozer C-Frame					
KGA9G consisting of: KG9100 Blade Assembly KAD9G Brace Group	For Caterpillar D9G and earlier Tractors equipped with Cat C-Frame Group No. 3J5578, 1J2222 or 1J6963	22' 10"	13' 3"	6' 4 3/4"	9710 7915 1795
KGA9IG consisting of: KG9100 Blade Assembly KAD9IG Brace Group	For Caterpillar D9G Tractors equipped with Cat C-Frame Group No. 3J5300 or 5J4497	22' 10"	13' 3"	6' 4 3/4"	9795 7915 1880

NOTE: All Series KGA ROME K/G CLEARING BLADES can be used with either cable or hydraulic operation if available on tractor. No sheaves, cable, hydraulic cylinders or components are furnished by ROME.

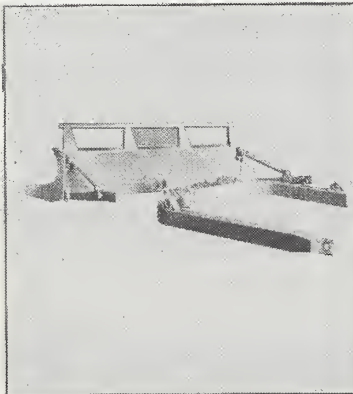
When ordering Series KGA ROME K/G CLEARING BLADES for Caterpillar Track-Type Tractors, specify Tractor C-Frame Group Number.

SERIES KG FOR CATERPILLAR TRACTORS NOT EQUIPPED WITH CATERPILLAR BULLDOZER C-FRAMES

SPECIFICATIONS



**Rome K/G Clearing Blade
and Rome C-Frame.**



**View of detached blade
from C-Frame.**

Catalog Number	DESCRIPTION	Overall Length Trunnion to Stinger Tip	Overall Width Mounted	Height	Net Wt. (Lbs.)
FOR CATERPILLAR D5 TRACTORS					
KG5 consisting of: KG6100B Blade Assembly KD5200 C-Frame KAD61A Brace Group	For Caterpillar D5 Tractors (74" Gauge), Serial No. 82H1-up and 84H1-up	14' 9"	8' 11 1/2"	4' 4 1/2"	4565 2280 1630 655
FOR CATERPILLAR D6 TRACTORS					
KG6B consisting of: KG6100B Blade Assembly KD6200B C-Frame KAD61A Brace Group	For Caterpillar D6 and D6B Tractors (74" Gauge), Serial No. 4R, 9U and 44A	15' 6"	10' 4 1/2"	4' 4 1/2"	4565 2280 1630 655
KG6C consisting of: KG6100B Blade Assembly KD6200 C-Frame KAD61A Brace Group	For Caterpillar D6C Tractors (74" Gauge), Serial No. 74A-1 and 76A-1 up	15' 9 1/2"	10' 4 1/2"	4' 4 1/2"	4585 2280 1650 655
FOR CATERPILLAR D7 TRACTORS					
KG7D consisting of: KG6100B Blade Assembly KD7-6200 C-Frame KAD61A Brace Group	For Caterpillar D7 Tractors, Serial No. 3T, 7M and 17A	16' 2 1/2"	10' 4 1/2"	4' 4 1/2"	4565 2280 1630 655
KG7E consisting of: KG7100E Blade Assembly KD7200 C-Frame KAD7E Brace Group	For Caterpillar D7E Tractors, Serial No. 47A1 through 47A395 and 48A1 through 48A6392 (4 3/8" diameter trunnions)	18' 7"	11' 2"	5' 1"	7275 3720 2330 1225
KG7E5 consisting of: KG7100E Blade Assembly KD7200A C-Frame KAD7E Brace Group	For Caterpillar D7E Tractors, Serial No. 47A-3396-up and 48A6393-up (5" diameter trunnions)	18' 7"	11' 2"	5' 1"	7295 3720 2350 1225
FOR CATERPILLAR D8 TRACTORS					
KG8F consisting of: KG7100E Blade Assembly KD8-7200 C-Frame KAD7E Brace Group	For Caterpillar D8 Tractors, Serial Nos. 2U up to 14A-7132 and 15A-2516	18' 11"	11' 2"	5' 1"	7270 3720 2325 1225
KG8H consisting of: KG8100CA Blade Assembly KD8200 C-Frame KAD8H Brace Group	For Caterpillar D8H Tractors, Serial No. 36A1 and 46A1-up	21' 4"	12' 4"	5' 4"	11640 5540 4560 1540

NOTE Series KG ROME K/G CLEARING BLADES are furnished as a complete unit for mounting on the trunnions of a Caterpillar Track-Type Tractor. No trunnions, sheaves, cable, hydraulic cylinders or components furnished by ROME. When K/G Blades are to be installed on Caterpillar tractors which are presently equipped with Straight Bulldozers and Cable Control, it is necessary that the sheave hitch be changed to angle dozer sheave hitch. Maximum usable track width same as recommended by Caterpillar Tractor Co. for C-Frames.

When ordering Series KG ROME K/G CLEARING BLADES for Caterpillar Track-Type Tractors, specify tractor serial number.

V-TREE CUTTER

FLECO

LAND CLEARING EQUIPMENT

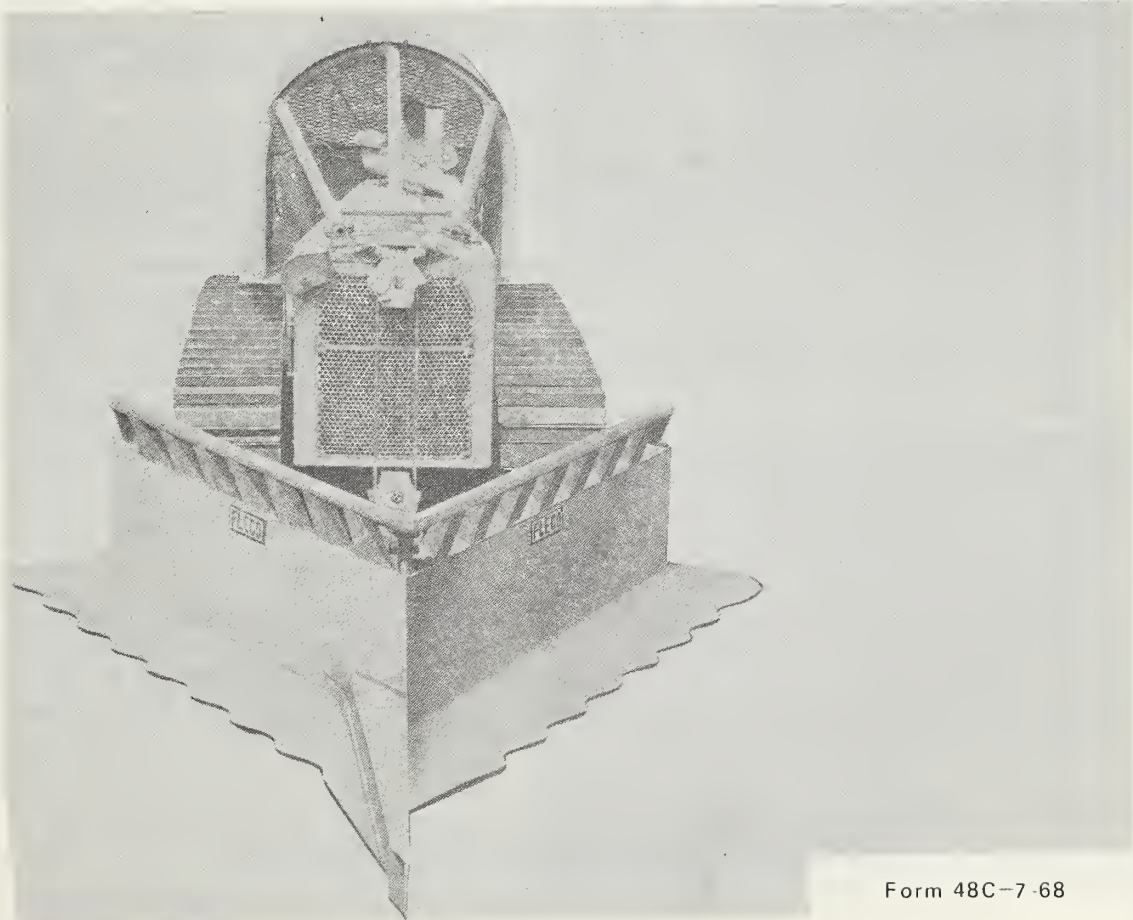
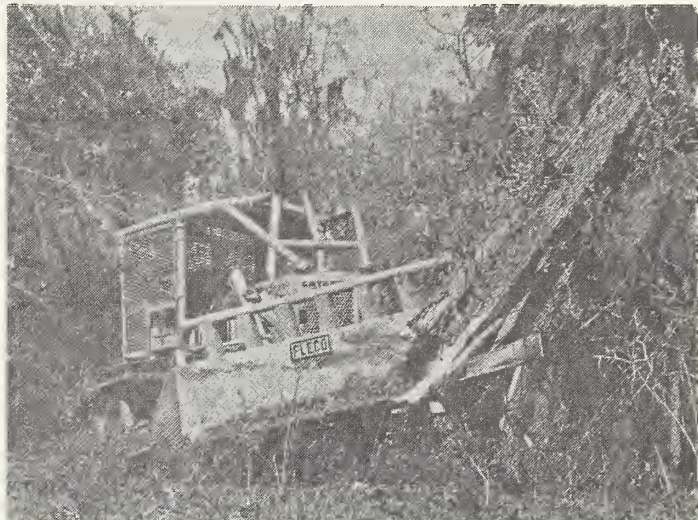
VT8
VT7
VT6
VT5
VT4

SERRATED, ALLOY STEEL CUTTING BLADES angled in an acute "V" shear growth in a continuous pass. Cutting edges are hard-faced for longer blade life.

HIGH STRENGTH STEEL SHEAR SPLITTER concentrates tractor weight and horsepower for removing large trees and stumps.

HEAVY DUTY BRUSH RACK helps shed debris away from operator and machine.

EXCLUSIVE, BOLT TOGETHER DESIGN allows fast assembly or disassembly in the field.



Form 48C-7-68

FLECO V-TREE CUTTER SPECIFICATIONS

**V-TREE CUTTERS MOUNT DIRECTLY
ON THE TRACTOR TRUNNIONS
AND ARE AVAILABLE FOR CABLE
OR HYDRAULIC CONTROLS.**



FOR USE WITH CATERPILLAR D8, D7, D6, D5 AND D4 TRACTORS

CAT TRACK TYPE TRACTOR MODEL	D8 46A, 36A, 35A		D8 15A, 14A, 13A	D7 48A, 47A	D7 17A, 3T	D6 74A, 76A, 10K, 99J	D6 44A, 9U	D5 96J, 94J, 82H, 84H	D4 78A, 40A, 22C, 82J, 83J
CUTTING WIDTH	14'	12'	10'-10"	10'-10"	10'	10'	10'	10'	8'-2"
OVERALL HEIGHT	51"	51"	49"	49"	44"	44"	44"	44"	41"
OVERALL LENGTH	25'	25'	21'	21'-2"	18'-11"	18'-4"	17'-7"	17'-7"	15'-6"
BRUSH RACK HEIGHT	15"	15"	15"	15"	14"	14"	14"	14"	11"
SPLITTER EXTENSION	48"	48"	37"	37"	30"	30"	30"	30"	24"
BLADE DEPTH	24"	24"	16"	16"	14"	14"	14"	14"	12"
BLADE THICKNESS	1-1/8"	1-1/8"	1"	1"	3/4"	3/4"	3/4"	3/4"	3/4"
TOTAL WEIGHT	11,800	11,500	8,000	7,815	5,700	5,425	5,000	5,000	3,600

1 inch (") = 2.54 cm

1 foot (') = 0.3048 m

1 pound = 0.453 kg

GENERAL INFORMATION

The FLECO V-TREE CUTTER is a high production land clearing blade for shearing trees, stumps and brush at ground level. A sharp angle or "V", formed by the two cutting blades, concentrates tractor weight and horsepower down the center line of the cutter. This concentration of weight and power permits the tractor to cut through most growth at a steady pace, shedding cut material to the sides.

The cutting blades on the V-TREE CUTTER are serrated to achieve a shearing and sawing action. An important advantage of the serrated blade is that it does not require sharpening as often as a straight blade.

A shear splitter, mounted at the point of the cutting blades, is designed to split large trees and stumps. The front portion of the right cutting blade extends up the side of the splitter, so that the portion of the tree or stump which has been split out can be sheared off in a continuous forward motion of the tractor.

The V-TREE CUTTER is built in two sections which bolt together with high strength steel bolts. This bolt-together design permits the larger cutters to be taken apart and moved as a standard load.

The V-TREE CUTTER mounts directly on the tractor trunnions and is available for cable or hydraulic operation on Caterpillar D4 through D8 tractors.

The V-TREE CUTTER utilizes the full potential of the tractor for clearing trees and stumps at ground level. It is effective in large and small growth - dense or sparse - and can be worked in a versatile unrestricted pattern.

Since the V-TREE CUTTER has two (2) cutting sides, large growth can be felled right or left into the cleared area. The tractor is not subjected to excessive side thrust when shearing or splitting growth. Since side thrust and off-center shock loading on track components are virtually eliminated, equipment maintenance costs are reduced.

When the soil contains rocks large enough to damage the cutting blades a V-TREE CUTTER should not be used.

RECOMMENDATIONS

The V-TREE CUTTER is used for high production clearing of trees, stumps and brush when the removal of sub-surface growth is not required. Applications for the V-TREE CUTTER include dam site clearing, industrial and agricultural clearing, road pioneering, right-of-way clearing and similar operations. A Fleco Cab Guard should be mounted on any tractor which is used for clearing land.

**FLECO CORPORATION, JACKSONVILLE, FLORIDA, U.S.A.
FLECO OVERSEAS LIMITED, NASSAU N.P., BAHAMAS**

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Specifications subject to change without notice.

YOUNG STUMP SPLITTER

STUMP SPLITTER

A scientifically designed land clearing tool, used in conjunction with a crawler tractor to speed up the removal of stumps. The splitter point of cast alloy steel is ground to a sharp edge. It flares in two directions to aid the splitting action and permit easy withdrawal. The basic splitter is available in 2 sizes. Adapters are available for mounting the basic splitter onto a Young clearing blade or brush rake, or onto Ateco, Caterpillar, International Harvester or Allis-Chalmers tractor-mounted ripper cross beams.

STUMP SPLITTER MODEL	SP100	SP300
FOR TRACTOR MAKE AND MODEL	IH TD15 AC HD11 Cat D6	IH TD20, 25, 30 AC HD16, 21 Cat D7, 8, 9 Euc D2-30, 40
SPLITTER LENGTH	72	96
SPLITTER WEIGHT	1,050	1,330

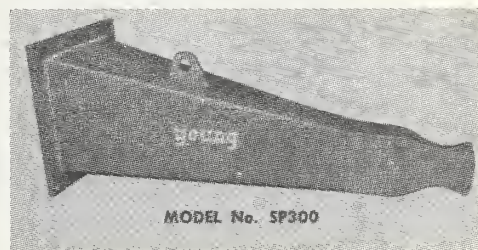
Stump Splitter Adapter Package Numbers

ADAPT SPLITTER TO					
YOUNG Clearing Blade	Model	4K8	5K8	6K8	7K8
ADAPTER PACKAGE NO.		389W1	389W2	389W3	389W4
ADAPTER WEIGHT		50	65	65	65
YOUNG Brush Rake	Model	48R	58R	68R	78R
ADAPTER PACKAGE NO.		389W5	389W6	389W7	389W8
ADAPTER WEIGHT		100	130	130	130

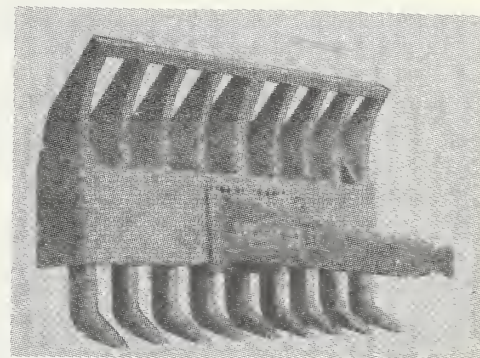
TRACTOR REAR MOUNTED RIPPERS

ATECO Parallel Lift	Model			HPR-TD25	HPR-TD30
ADAPTER PACKAGE NO.				389W9	389W10
ADAPTER WEIGHT				550	650
CATERPILLAR, Hinged	Model			NO8	NO9
ADAPTER PACKAGE NO.				389W11	389W12
ADAPTER WEIGHT				550	650
CATERPILLAR, Parallelogram Multi-Shank	Model	NO6	NO7	NO88	NO98
ADAPTER PACKAGE NO.		389W13	389W14	389W15	389W16
ADAPTER WEIGHT		220	250	255	255
ALLIS CHALMERS Parallelogram	Model	TR-11	TR-16	TR-21	
ADAPTER PACKAGE NO.		389W17	389W18	389W19	
ADAPTER WEIGHT		200	230	230	
INTERNATIONAL Hinged Type	Model	158	208	258	30
ADAPTER PACKAGE NO.		389W20	389W21	389W22	389W23
ADAPTER WEIGHT		400	550	550	650

TO ORDER—Specify (1) Young splitter model number, (2) adapter number required.



MODEL No. SP300



MODEL No. SP300 STUMP SPLITTER
with ADAPTER PACKAGE No. 389W22
mounted on CLEARING BLADE MODEL No. 6K8

ROCKLAND SM-4 STUMPER

SM-4 STUMPER

Rockland SM-4 stumpers are designed for unparalleled stumping efficiency. The full force of the tractor is concentrated on each individual stump to "pop" them out of the ground. An optional splitter is available to speed large stump removal.

SPECIFICATIONS

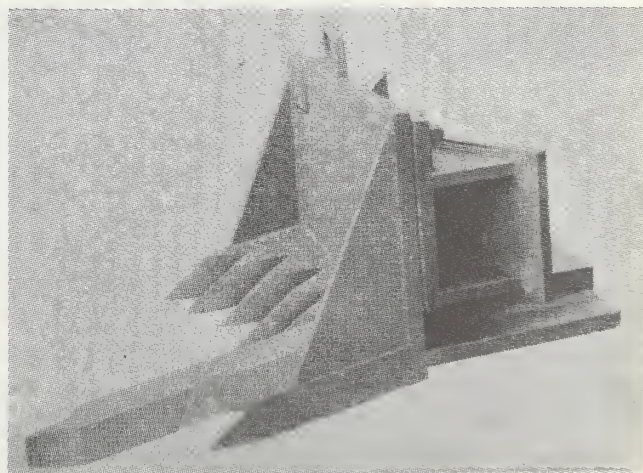
Caterpillar (& other)	D-6	D-7	D-8	D-9
Width	30"	30"	36"	36"
Height	26"	26"	30"	30"
Weight	750	1200	1460	1675

Optional Splitter

	24"	36"	36"	42"
Length				
Weight	315	610	750	950

MOUNTING INFORMATION

The SM-4 comes complete, ready to mount on the standard "C" frame without modifications.



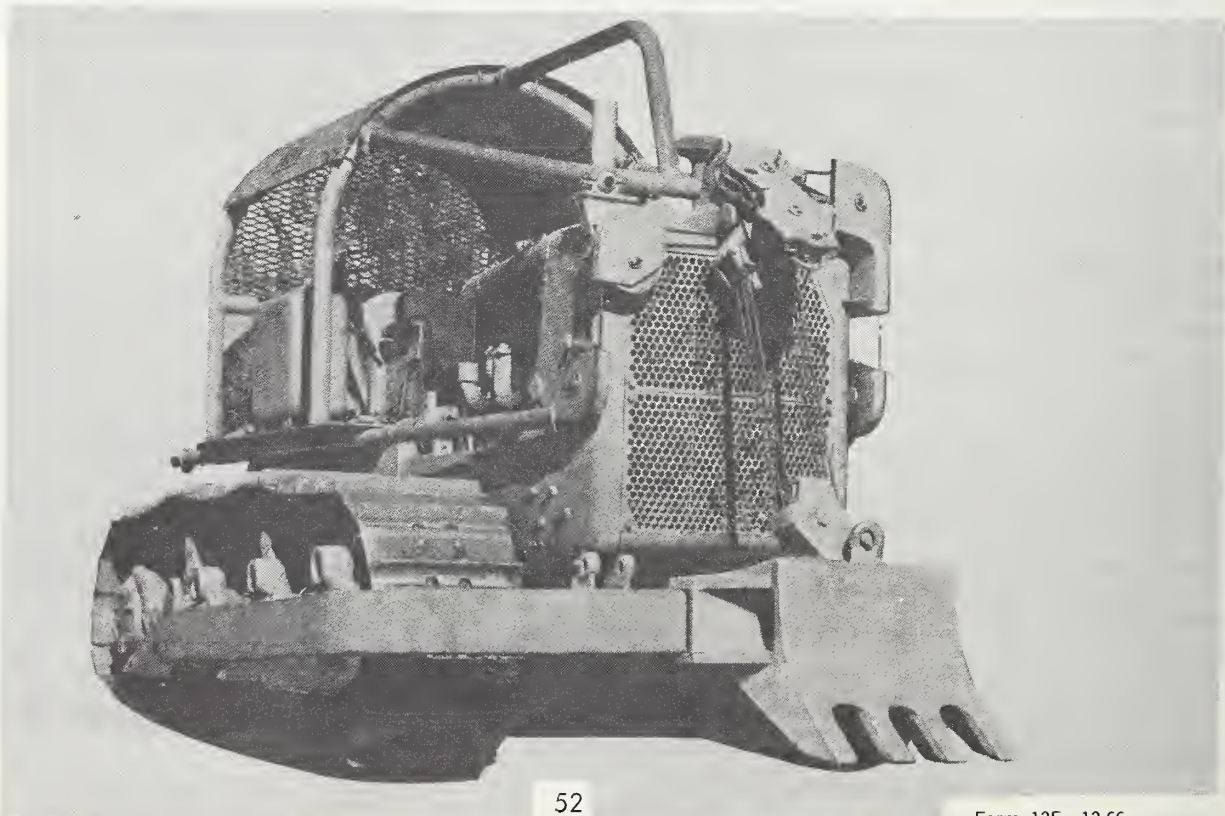
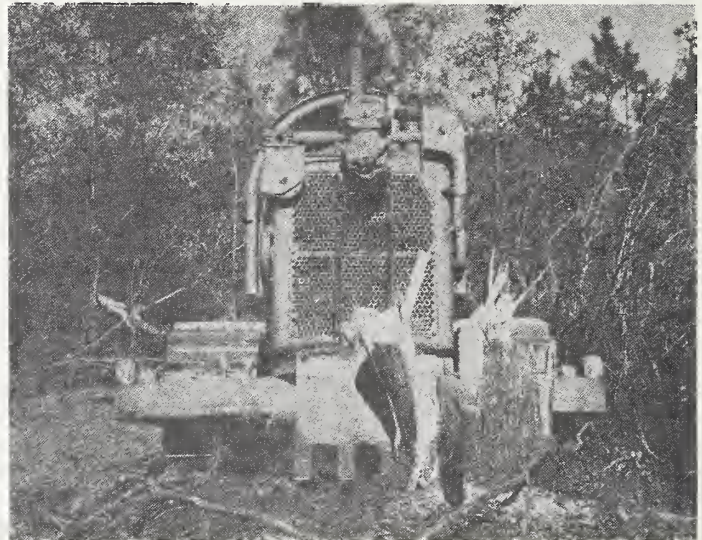
DETACHABLE STUMPER

FLECO

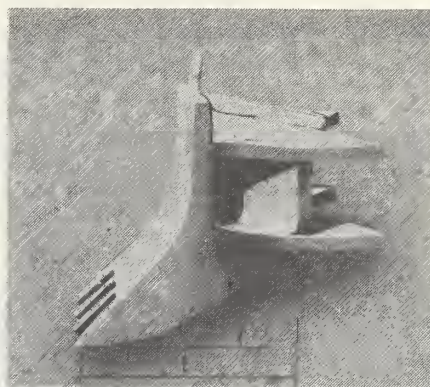
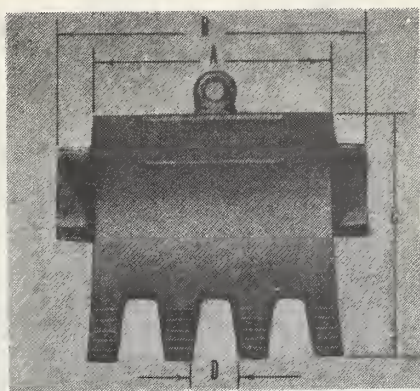
LAND CLEARING EQUIPMENT

DS9
DS8
DS7
DS6
DS4

- CONCENTRATES TRACTOR WEIGHT AND POWER INTO PRY-OUT ACTION FOR FAST — EFFICIENT STUMP REMOVAL.
- CURVED FACE GETS UNDER AND LIFTS OUT STUMPS AND ROOTS.
- IMPROVED DESIGN ALLOWS DEEPER PENETRATION AND MOVES LESS DIRT.
- OPTIONAL SPLITTER PENETRATES AND SPLITS LARGE STUMPS INTO SEGMENTS FOR QUICK — LOW COST REMOVAL.



FLECO DETACHABLE STUMPER SPECIFICATIONS



FOR USE WITH CATERPILLAR D9, D8, D7, D6 AND D4 ANGLE DOZER EQUIPPED TRACTORS

CATERPILLAR TRACK TYPE TRACTOR MODEL	D9	D8 (With 28E1 Dozer)	D8 (Prior to 28E1 Dozer)	D7 & D6C	D6B 74"-60"	D4 60"-44"
A	36"	30"	30"	30"	30"	18"
B	54"	48"	42"	42"	38 1/2"	30 1/2"
C	38 1/2"	30 1/2"	28 1/2"	26"	26"	27 5/8"
D	6"	5 1/2"	5 1/2"	5 1/2"	5 1/2"	2"
E	14 1/2"	12 1/2"	12 1/2"	12 1/2"	12 1/2"	17 1/4"
*F	24 3/8"	22"	19 1/2"	19 1/2"	19 1/2"	22"
Weight (Lbs.)	2725	2009	1955	1180	1093	849
**Length of Splitter	Not Available	42"	42"	42"	24"	27 1/2"
**Weight of Splitter (Lbs.)	Not Available	953	700	700	360	252

1 inch (") = 2.54 cm

1 foot (') = 0.3048 m

1 pound = 0.453 kg

*F is measurement from forward tip of teeth back to C-frame.

**Splitter is available as optional equipment.

GENERAL INFORMATION

FLECO DETACHABLE STUMPERS have been redesigned for maximum stumping efficiency. A SPLITTER is available for all DETACHABLE STUMPERS as an optional attachment.

New DETACHABLE STUMPERS are manganese carbon steel castings, annealed for strength and wear, for use on angling dozer arrangements. The surface area between the teeth has been reduced, which in effect, lengthens the Stumper teeth. The curved face of the DETACHABLE STUMPER now penetrates deeper to get under and lift out stubborn stumps and roots. In addition to the deeper penetration now possible, the new DETACHABLE STUMPER moves considerably less dirt than former models. The full weight and power of the tractor is concentrated on the STUMPER face for fast, efficient stump and root removal.

DETACHABLE STUMPERS mount on the C-frame of all Caterpillar angling bulldozer arrangements as well as

most other makes. Cable or hydraulic controls may be used. No maintenance is required other than resurfacing the teeth points at infrequent intervals.

In addition to the improved design, SPLITTERS are now available as optional equipment for all DETACHABLE STUMPERS. The SPLITTER is welded to the left side of the standard DETACHABLE STUMPER. It is available for models in the field.

The SPLITTER penetrates and splits stubborn stumps permitting their removal in segments. Stumps previously considered too large for economical removal can be split several times and lifted from the ground quickly and at low cost.

The FLECO DETACHABLE STUMPER is recommended for use in stumping and tree removal operations and can also be used as a utility ditcher. It will penetrate the ground up to approximately 15 inches and can cut a swath the full width of the STUMPER face.

FLECO CORPORATION, JACKSONVILLE, FLORIDA, U.S.A.,
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MODEL SSR STUMP SPLITTER

FOR HINGE-TYPE RIPPERS

FLECO

PRELIMINARY SPECIFICATIONS

GENERAL INFORMATION

The FLECO SSR STUMP SPLITTER makes it possible for the land clearing tractor to remove stumps without blasting. There is virtually no limit to the size stump which can be removed by the Stump Splitter equipped tractor. Large stumps are shattered, several times if necessary, with the rear mounted Splitter. Small stumps are usually split once. Stumps, large or small, are easily removed with the front mounted rake or blade after they have been split and shattered by the Stump Splitter.

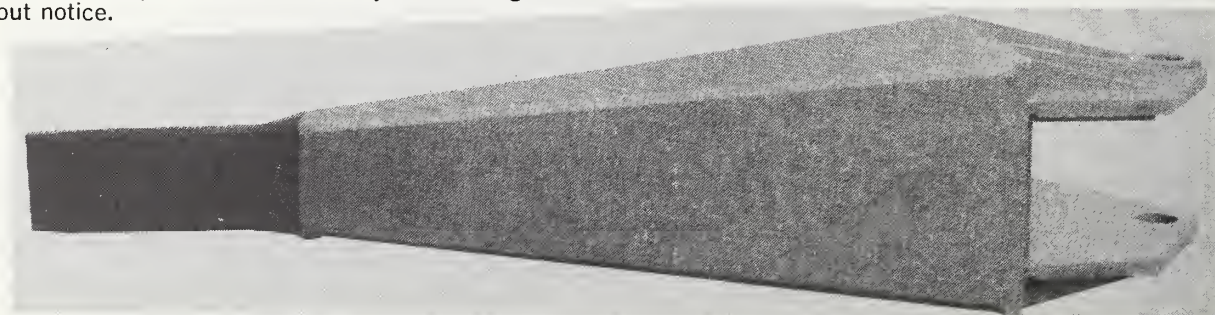
The Stump Splitter mounts like a stinger on the hinge-type ripper bar by utilizing the hole at the center shank position. The heat treated, alloy steel Splitter point is designed for quick, easy penetration into stumps.

Land clearing contractor can reduce overall clearing costs considerably by using the FLECO SSR STUMP SPLITTER. In addition to the savings realized through lower stump removal costs there is a savings through lower disposal costs since split stumps burn better.

SPECIFICATIONS

TRACTOR	*(D8)	(D9)
Reference	AA10828	AA16849
Length, overall	7' 11"	9' 11"
Length, Splitter behind ripper bar	6' 4"	8' 4"
Width, overall	24"	24"
Width, at tip	3"	3"
Height, overall	20"	20"
Height, at tip	8"	8"
Weight, approximate (lbs.)	1675	2100
List Price, F.O.B. Jacksonville, Florida	\$735.00	\$920.00
*For 14A, 15A, 36A and 46A Series D8 Tractors with No. 8 Hinge-type Rippers.		

Prices and Specifications are subject to change without notice.



FLECO CORPORATION, Jacksonville, Florida, U.S.A.

FLECO OVERSEAS LIMITED, Nassau N. P., Bahamas

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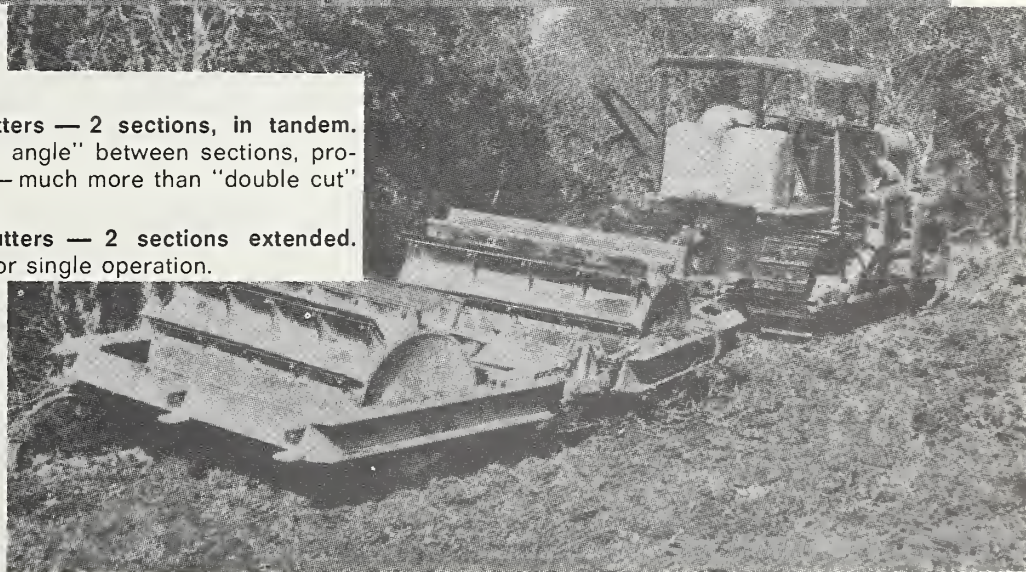
Marden Duplex Brush and Weed Cutters

	Code	Width of Cut or Drum Width	Drum Dia.	Overall Width	Overall Dia.	Penetration	Knife Spacing at Cutting Edge	No. & Width of Knives	Approx. Weight Pounds	Capacity Gallons	H.P. Req'd.	Gross Shipping Pounds	Export Weights Kilos
Heavy													
Brush Cutter 14'	SB14	14'	57"	15'-6"	79"	11"	18"	14 17-8"	22,000	35,000	1,930	23,000	13,500
Brush Cutter 12'	SB12	12'	57"	14'-6"	79"	11"	18"	12 17-8"	20,000	34,000	1,650	21,000	9,500
Brush Cutter 10'	SB10	10'	57"	12'-6"	79"	11"	18"	10 17-8"	18,000	29,000	1,375	19,000	8,500
Brush Cutter 8'	SB8	8'	57"	10'-6"	79"	11"	18"	8 17-8"	16,320	24,500	1,100	17,000	7,200
Brush Cutter 7'	SB7	7'	43"	9'	65"	11"	17"	7 15-8"	8,250	12,000	500	9,000	4,100
Medium													
Brush Cutter 7'	SM7	7'	33"	8'-6"	55"	8"	16"	10-8"	6,000	8,500	290	7,000	3,170
Light													
Brush Cutter 7'	SL7	7'	24"	8'	36"	6 1/2"	15"	8-6"	2,800	4,200	160	3,000	1,360
Brush Cutter 5'	SL5	5'	24"	6'	37"	6 1/2"	15"	3-6"	2,000	3,000	115	2,240	1,015
Weed Cutter 5'	SW5	5'	20"	68"	28"	4-5"	12"	2-4 1/2"	1,000	1,336	80	1,060	480
Weed Cutter 4'	SW4	4'	20"	56"	28"	4-5"	12"	2-4 1/2"	800	1,350	65	900	408

All Models equipped with: Timken Tapered Roller Bearings. Wrap around frame. Drawbar—bolt on or flanged.

Marden Duplex Brush Cutters — 2 sections, in tandem.
Features patented "Marden angle" between sections, producing — in just one pass — much more than "double cut" action.

Marden Duplex Brush Cutters — 2 sections extended.
Doubles the cutting width for single operation.



Marden

Manufacturing Company

205 Denton Avenue, Auburndale, Florida, U.S.A. 33823

Cables : MARDEN

ROLLING CHOPPER

FLECO

LAND CLEARING EQUIPMENT

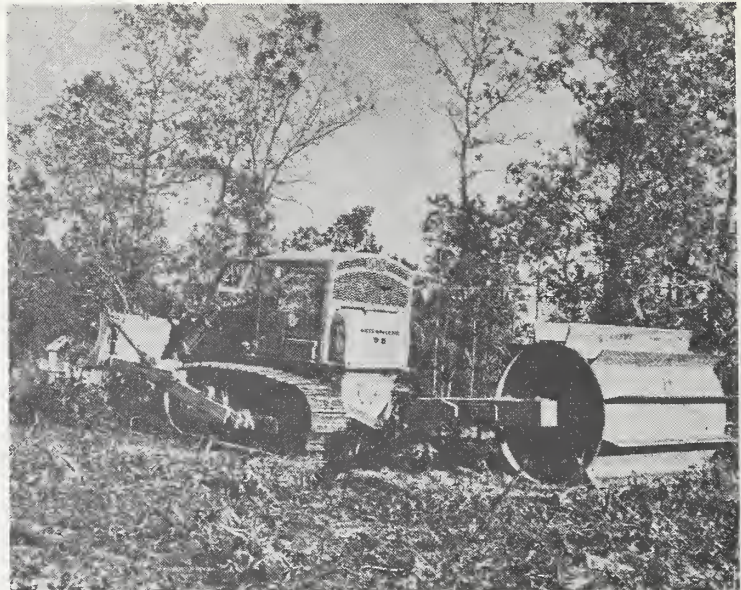
SINGLE
TANDEM
TRIPLE

ROLLING CHOPPERS STANDARDIZED

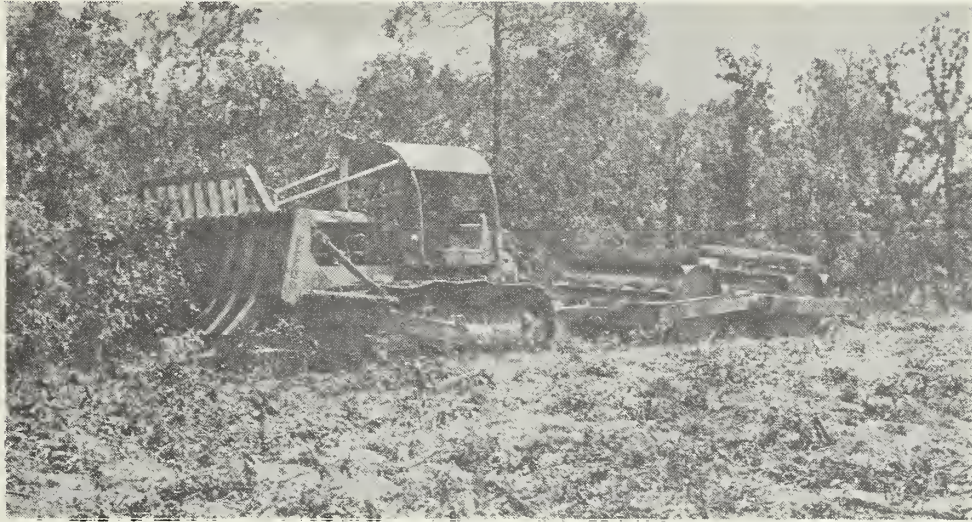
Fleco **ROLLING CHOPPERS**, single and multiple drum models, have been re-designed to a standard configuration. The **ROLLING CHOPPERS** were standardized to improve our competitive, market position by offering basic models suitable for most job applications. These new Choppers have rigid tongues, bronze sleeve type bearings and weld-on cutting blades as standard equipment. No changes have been made in the heavy-duty material specifications of the drums, frames and hitches.

A wide selection of optional equipment is available for the **ROLLING CHOPPERS**. This optional equipment can be ordered installed on the basic unit to adapt it to meet individual job requirements or customer preference. Optional equipment available includes: a spring loaded tongue to reduce shock loading, a hinged tongue which swings up to reduce over-all length of the Chopper for transporting, reversible bolt-on blades with back-up plates, roller bearings and others. A complete list of optional equipment is shown on the current specification sheet.

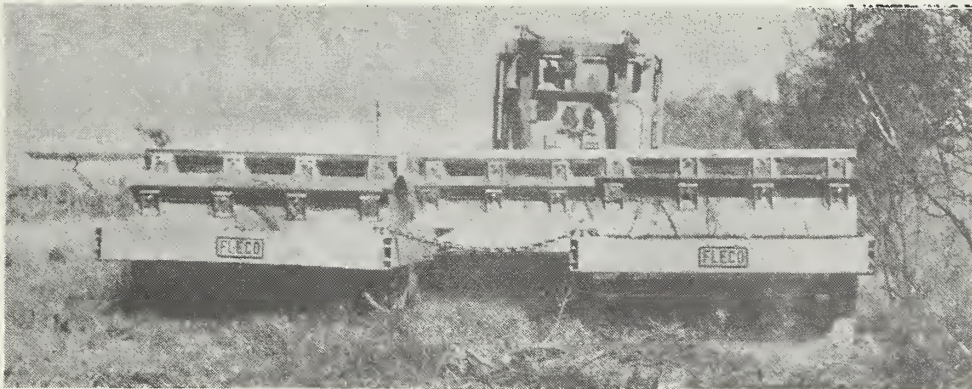
Applications for these new Fleco **ROLLING CHOPPERS** include: preparation of forest sites, brush control on rights-of-way for utility, oil and gas lines, clearing for reservoirs, preparation of seedbeds, pasture clearing and maintenance and similar operations.



ROLLING CHOPPER

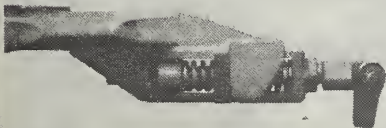


TANDEM CHOPPERS give a double cut action on each single pass of the equipment. FLECO TANDEM CHOPPERS are constructed with two additional blades on the rear drum to prevent tracking in the cut of the front drum.



Mutiple drum CHOPPERS are equipped with Swivel Connecting Assemblies. This exclusive feature allows full maneuverability of the units, including sharp turning and backing.

OPTIONAL EQUIPMENT INCLUDES:



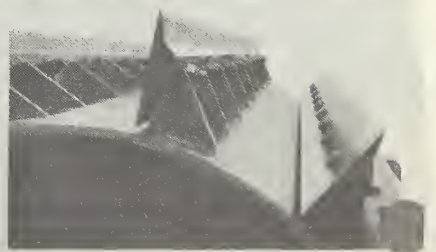
SPRING-LOADED HITCH

Spring-loaded hitch dampens shocks and impacts.



HINGED TONGUE

Hinged tongue swings-up to reduce over-all length for transporting.



BOLT-ON BLADES

Reversible cutting blades bolt to back-up plates which are welded to the drum.

FLECO® ROLLING CHOPPER SPECIFICATIONS

FOR USE WITH CATERPILLAR TRACK-TYPE TRACTORS

SINGLE DRUM MODELS

TRACTOR DRAWBAR HORSEPOWER REQUIRED	MODEL SS1616 268 Up	MODEL SS1412 230 Up	MODEL SS1212 185 Up	MODEL SS1012 130 Up	MODEL SS812 97-130	MODEL SS710 50-75	MODEL SS610 35-50
WIDTH OF CUT	16'	14'	12'	10'	8'	7'	6'
OVERALL WIDTH	19'-2"	16'-8"	14'-8"	12'-4"	10'-4"	9'-2"	8'-2"
OVERALL LENGTH	21'	16'-5"	16'-5"	15'	15'	13'	11'
DRUM DIAMETER	6'	5'	5'	5'	5'	4'	3'
BLADE SIZE	1"x10"x16'	1"x10"x14'	1"x10"x12'	1"x10"x10'	3/4"x10"x8'	3/4"x8"x7'	5/8"x6"x6'
NUMBER OF CUTTING BLADES (WELD-ON)	16	12	12	12	12	10	10
DISTANCE BETWEEN BLADE CUTTING EDGES (APPROX.)	18"	21"	21"	21"	21"	21"	15"
BEARINGS							
BRONZE SLEEVE TYPE							
WATER CAPACITY (GALS.) APPROX.	3,173	1,895	1,635	1,294	1,000	561	284
WEIGHT APPROX. (LBS.) EMPTY	34,200	21,200	17,500	13,000	9,600	6,600	4,300
WEIGHT APPROX. (LBS.) FILLED WITH WATER	60,590	36,985	31,120	23,780	17,930	11,273	6,665
OPTIONS							
REVERSIBLE BOLT-ON BLADES ADD LBS.	7,800	4,000	3,700	3,000	2,500	1,300	700
SPRING LOADED HITCH ADD LBS.	700	500	400	400	400	200	200
FULL FRAME ADD LBS.	Standard	Standard	Standard	1,500	1,200	900	700
HINGED TONGUE ADD LBS.	Standard	700	600	600	500	Not Available	Not Available
BEARINGS							
ROLLER BEARINGS							
MAXIMUM CHOPPING WEIGHT PER FOOT OF CUTTING WIDTH (LBS./FT.)	4,318	3,013	2,985	2,928	2,816	1,953	1,377

TANDEM DRUM MODELS

TRACTOR DRAWBAR HORSEPOWER REQUIRED	MODEL TS1012 260 Up	MODEL TS812 185 Up	MODEL TS710 97 Up	MODEL TS610 50 Up
WIDTH OF CUT	10'	8'	7'	6'
OVERALL WIDTH	12'-4"	10'-4"	9'-2"	8'-2"
OVERALL LENGTH	25'	25'	24'	19'-6"
DRUM DIAMETER	5'	5'	4'	3'
BLADE SIZE	1" x 10' x 10'	1" x 10' x 8'	3/4" x 8' x 7'	5/8" x 6' x 6'
NUMBER OF CUTTING BLADES (WELD-ON)	26	26	22	22
DISTANCE BETWEEN BLADE CUTTING EDGES (APPROX.) FRONT DRUM	21"	21"	21"	15"
REAR DRUM	18"	18"	17"	13"
BEARINGS				
BRONZE SLEEVE TYPE				
WATER CAPACITY (GALS.) APPROX.	2,558	1,992	1,122	536
WEIGHT APPROX. (LBS.) EMPTY	27,200	20,200	13,650	9,050
WEIGHT APPROX. (LBS.) FILLED WITH WATER	48,507	36,793	22,996	13,515
OPTIONS				
REVERSIBLE BOLT-ON BLADES ADD LBS.	7,000	5,500	3,350	1,650
SPRING LOADED HITCH ADD LBS.	400	400	400	300
FULL FRAME ADD LBS.	1,500	1,200	900	700
HINGED TONGUE ADD LBS.	600	500	500	Not Available
BEARINGS				
ROLLER BEARINGS				
MAXIMUM CHOPPING WEIGHT PER FOOT OF CUTTING WIDTH (LBS./FT.)	2,928	2,816	1,953	1,377

TRIPLE DRUM MODELS

TRACTOR DRAWBAR HORSEPOWER REQUIRED	MODEL TRS710 155 Up	MODEL TRS610 75 Up
WIDTH OF CUT	19'-5"	17'-2"
OVERALL WIDTH	24'-6"	21'-4"
OVERALL LENGTH	24'	19'-6"
DRUM DIAMETER	4'	3'
BLADE SIZE	3/4" x 8' x 7'	5/8" x 6' x 6'
NUMBER OF CUTTING BLADES (WELD-ON)	30	30
DISTANCE BETWEEN BLADE CUTTING EDGES (APPROX.)	21"	15"
BEARINGS		BRONZE SLEEVE TYPE
WATER CAPACITY (GALS.) APPROX.	1,680	
WEIGHT (APPROX.) EMPTY	21,500	
WEIGHT (APPROX.) FILLED WITH WATER	35,494	21,197
OPTIONS		ROLLER BEARINGS
REVERSIBLE BOLT-ON BLADES ADD LBS.	3,900	
SPRING LOADED HITCH ADD LBS.	400	
FULL FRAME	Standard	Standard
HINGED TONGUE	Standard	Not Available
BEARINGS		ROLLER BEARINGS
MAXIMUM CHOPPING WEIGHT PER FOOT OF CUTTING WIDTH (LBS./FT.)	2,041	
		1,380

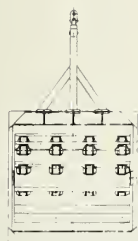
1 Inch (1") = 2.54 cm

1 foot (1') = 0.3048 m

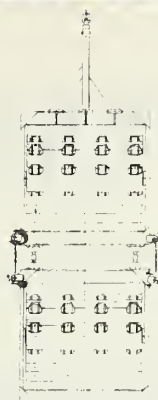
1 Pound = 0.453 kg

1 U.S. Gal. = 3.785 Liters

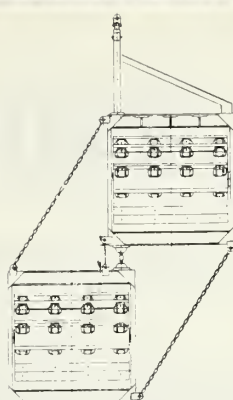
DIRECT DRIVE TRANSMISSION TRACTORS ARE RECOMMENDED FOR MAXIMUM EFFICIENCY WHEN CHOPPING.
CONTACT THE FACTORY FOR SPECIFICATIONS OF DUAL DRUM CHOPPERS.



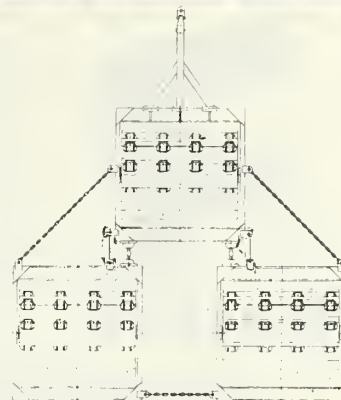
SINGLE



TANDEM



DUAL



TRIPLE

FLECO ROLLING CHOPPERS offer a fast, economical method of killing undesirable growth. The drum of the Chopper, which is normally filled with water to increase its weight, has weld-on cutting blades which can penetrate 6 to 10 inches deep. Operating in second and third gear the Chopper blades strike with terrific force, cutting, fracturing and shattering growth. ROLLING CHOPPERS furrow and loosen soil crust with minimum topsoil disturbance.

A wide selection of optional equipment is available for all model FLECO ROLLING CHOPPERS. This optional equipment can be ordered installed on the basic unit to adapt it to meet individual job requirements or customer preference. Optional equipment available includes: a spring loaded tongue to reduce shock loading, a hinged tongue which swings up to reduce the overall length of the Chopper for transporting, reversible bolt-on blades with back-up plates, roller bearings and others. A complete list of optional equipment is shown with the specifications.

The excellent maneuverability of FLECO CHOPPERS, including backing and sharp turning, results in higher production rates. Multiple drum Choppers have swivel connecting assemblies which connect the drums. This exclusive feature permits the Multiple Drum Choppers to have the same wide range of maneuverability as the Single Drum Choppers.

FLECO multiple unit ROLLING CHOPPERS are available in three (3) combinations: TANDEM arrangements, DUAL arrangements and TRIPLE arrangements. In a TANDEM arrangement, a second

drum is pulled behind the front drum to give a double cutting action on each single pass of the tractor. The rear drum of a TANDEM arrangement has two more blades than the front drum. This prevents the rear drum from tracking in the cut of the front drum. TANDEM arrangement ROLLING CHOPPERS are most effective in killing resprouting growth by double chop action. In a DUAL arrangement the second drum is located at the rear, but to the side, with a slight overlap of the two (2) drums. DUAL arrangement ROLLING CHOPPERS are used to cut a wider swath through medium growth, thus achieving greater production. TRIPLE arrangement drums are placed in a triangular pattern with the two (2) rear drums behind and outside the leading drum. Trailing drums overlap the lead drum slightly for complete coverage. ROLLING CHOPPERS in TRIPLE arrangements cut wide swaths on each pass and are generally used in medium and light growth.

FLECO ROLLING CHOPPERS pin to the drawbar and are pulled by the tractor. It is recommended that the tractor be equipped with a Rake or blade for tractor protection and to knock down heavy growth ahead of the machine. Tractors should be equipped with FLECO CAB GUARDS for greater operator safety.

RECOMMENDATIONS

Applications for FLECO ROLLING CHOPPERS include: preparation of forest sites, brush control on right-of-way for utility, oil and gas lines, clearing for reservoirs, preparation of seedbeds, pasture clearing and maintenance and similar operations.

FLECO CORPORATION, JACKSONVILLE, FLORIDA, U.S.A.,

FLECO OVERSEAS LIMITED, NASSAU N.P., BAHAMAS

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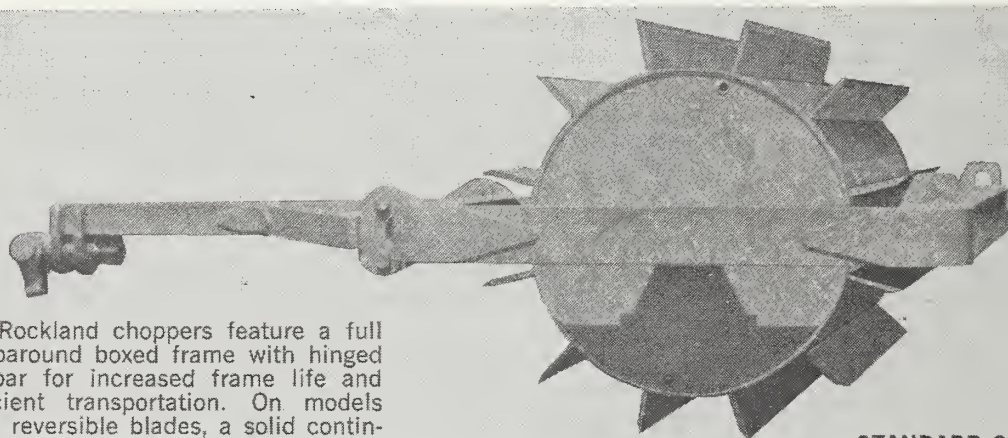


CHOPPERS

SINGLE AND MULTI-DRUM MODELS

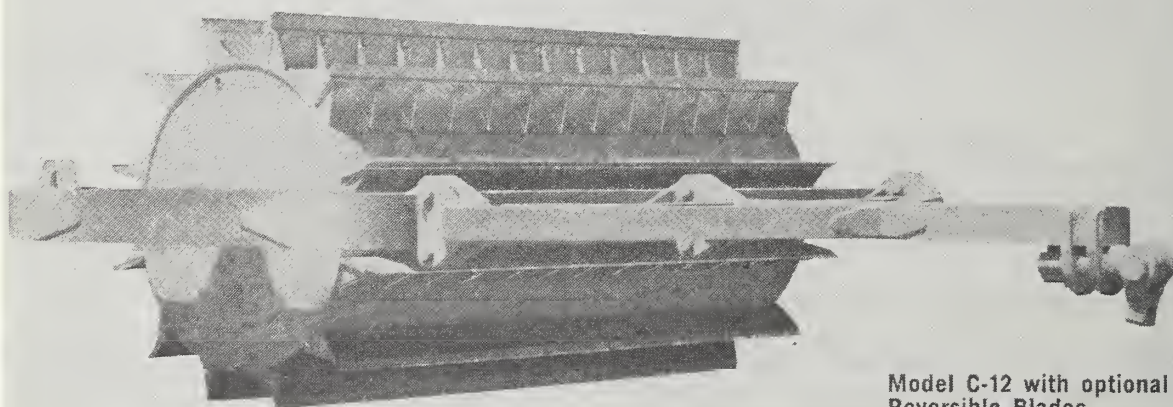
Rockland Choppers are designed and built for years of dependable trouble-free chopping. Such standard features as heavy duty drums and bearings, boxed pull frames, oversize hitches, and hinged drawbar, directly contribute to longer chopper life and reduced operating costs.

Rockland choppers are available in single, tandem, dual, and triple drum arrangements. Reversible bolt-on blades are an optional feature on all models.



STANDARD C-12

All Rockland choppers feature a full wraparound boxed frame with hinged towbar for increased frame life and efficient transportation. On models with reversible blades, a solid continuous mounting plate is used to eliminate brush hang up.



Model C-12 with optional Reversible Blades

GENERAL INFORMATION

All Rockland choppers come complete, ready to attach to the standard drawbar.

Multi-drum units are available either in tandem, dual or triple drum arrangements. The tandem models have two extra blades on the rear drum to prevent tracking. Multi-drum arrangements are recommended for chopping and killing light to medium growth.

SPECIFICATIONS: SINGLE DRUM MODELS

Models	C-6	C-7	C-8	C-10	C-12	C-14	C-16
Cutting Width	6'	7'	8'	10'	12'	14'	16'
Width Overall	8'	9'	10'	12'	14'2"	16'2"	18'2"
Drum Diameter	3'	4'	5'	5'	5'	5'	6'
Blade Size	3/4"x6"	3/4"x6"	1"x8"	1"x10"	1"x10"	1"x10"	1"x10"
No. of Blades	10	10	12	12	12	12	16
Weight Empty (lbs.)	4,700	8,600	11,000	14,500	18,200	20,000	33,600
Welded Blades Full	6,900	12,550	19,645	28,042	31,742	35,991	60,710
Weight Empty (lbs.)	5,200	9,300	12,000	15,900	20,000	21,900	40,200
Reversible Blades Full	7,400	13,250	20,645	29,442	33,542	37,891	67,310

REVERSIBLE BOLT ON BLADES OPTIONAL.

SPECIFICATIONS: MULTI-DRUM MODELS

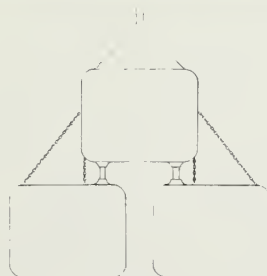
DRUM SIZE		6'x3'	7'x4'	8'x5'	10'x5'
MODELS	TANDEM	C-26	C-27	C-28	C-210
	DUAL	CD-26	CD-27	CD-28	CD-210
	TRIPLE	C-36	C-37	C-38	N.A.
CUTTING WIDTH	TANDEM	6'	7'	8'	10'
	DUAL	11'	13'	15'	19'
	TRIPLE	16'	19'	22'	N.A.
OVERALL WIDTH	TANDEM	8'	9'	10'	12'
	DUAL	13'	15'	17'	21'
	TRIPLE	18'	21'	24'	N.A.
WEIGHT EMPTY (lbs.)	STD. BLADES	TANDEM	9,100	14,900	20,600
		DUAL	9,085	14,870	20,545
		TRIPLE	14,650	21,900	29,750
	WITH REVERSIBLE BLADES	TANDEM	10,100	16,300	22,600
		DUAL	10,085	16,270	22,565
		TRIPLE	16,150	24,000	32,750
	STD. BLADES	TANDEM	13,500	22,800	37,890
		DUAL	13,465	22,770	37,845
		TRIPLE	21,250	33,750	55,685
	WITH REVERSIBLE BLADES	TANDEM	14,500	24,200	39,890
		DUAL	13,465	24,170	39,845
		TRIPLE	22,750	35,850	58,685
NO. OF BLADES PER UNIT	TANDEM	22	22	26	26
	DUAL	20	20	24	24
	TRIPLE	30	30	36	N.A.
BLADE SIZE		3/4"x6"	3/4"x6"	1"x10"	1"x10"



TANDEM



DUAL



TRIPLE

EXPORT CONVERSION TABLE

1 inch = 2.54 Cm.	1 sq. ft. = 929 Sq. Cm.
1 foot = 30.48 Cm.	1 sq. yd. = 0.836 Sq. Meters
1 mile = 1,609 Km.	1 U.S. Gal. = 3.785 Liters
1 sq. in. = 6.452 Sq. Cm.	1 pound = 0.453 Kg



61 **ROCKLAND**

ROCKLAND INC., EAST STORY ROAD
WINTER GARDEN, FLORIDA 32787

Specifications subject to change without notice.

ROOT PLOW

FLECO

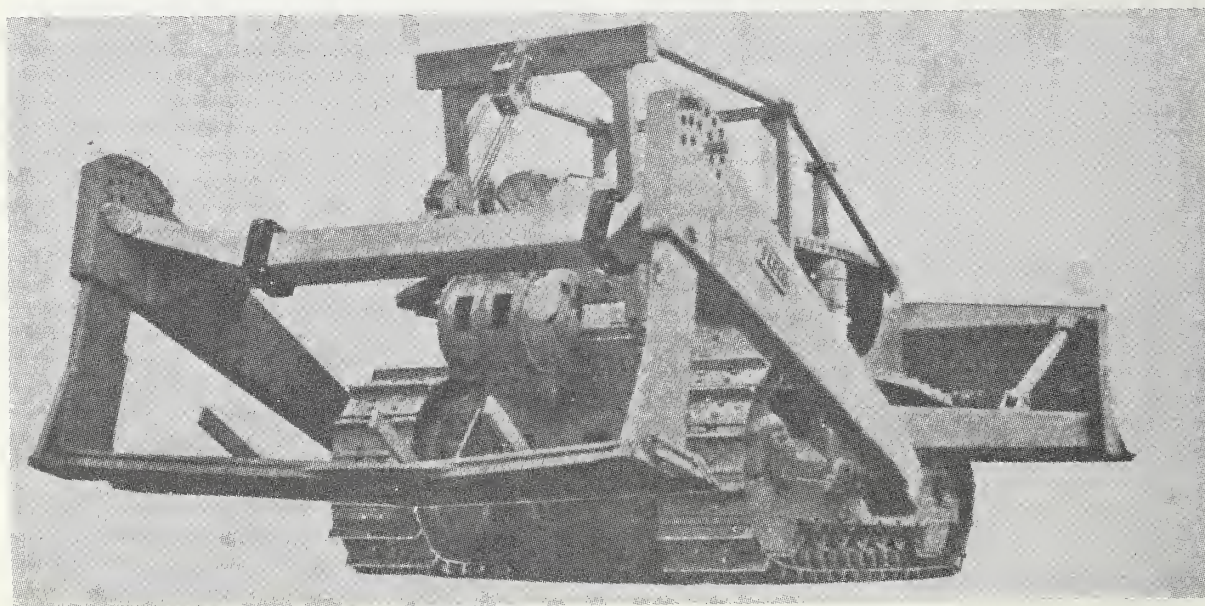
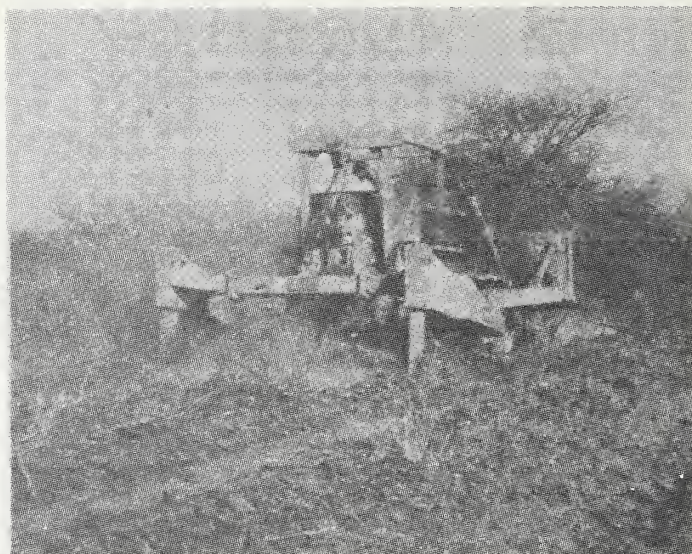
RP 9 RP 8
RP 7 RP 6

FLOATING ACTION gives uniform cutting at selected depth. 24 inch depth of cut on some models.

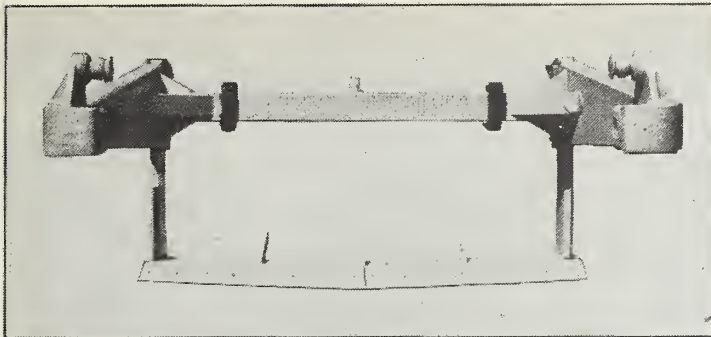
QUICK CHANGE DEPTH CONTROL ADJUSTMENT with seven or more settings for "best kill" plowing.

REVERSIBLE CUTTING BLADES insure maximum service life. Cutting blades are hard surfaced.

AVAILABLE FOR CATERPILLAR D6, D7, D8 and D9 Tractors.



FLECO ROOT PLOW SPECIFICATIONS



Spreader Boxes are flanged to speed assembly or disassembly of Root Plows. Flanges bolt together with special heat treated bolts.

FOR USE WITH CATERPILLAR D9, D8, D7 AND D6 DOZER-EQUIPPED TRACTORS

CAT TRACK-TYPE TRACTOR MODEL	D9 66A	D8 36A, 46A	D8 13A, 14A	D8 2U, 1H, 8R	D7 47A, 48A	D7 17A	D6 10K, 74A, 76A, 99J
MAXIMUM TRACK SHOE WIDTH	27"	26"	26"	26"	26"	22"	22"
TYPE CONTROL	REAR MOUNTED DOUBLE DRUM CABLE CONTROL						
OVERALL WIDTH DIRECT DRIVE	13'8"	12'	10'8"	9'6"	9'6"	8'8"	8'8"
OF CUT POWER-SHIFT	13'8"	11'	N.A.	N.A.	8'6"	N.A.	7'6"
OVERALL HEIGHT	73"	71"	62"	62"	62"	62"	62"
CLEARANCE—CUTTING BLADES TO CROSS BAR	54"	51"	45"	55"	55"	45"	45"
THICKNESS OF BLADE BASE ASSEMBLY	5"	4"	3 1/2"	3 1/2"	3 1/2"	2 1/4"	2 1/4"
LIFT ABOVE GROUND	36"	36"	21"	21"	21"	21"	21"
METHOD OF MOUNTING	ATTACHES TO TRACTOR TRUNNIONS						
NUMBER OF DEPTH SETTING ADJUSTMENTS	17	17	7	7	7	7	7
METHOD OF DEPTH ADJUSTMENT	ANGLE OF STANDARDS						
MAXIMUM CUTTING DEPTH	36"	36"	30"	30"	30"	30"	30"
CUTTING EDGES—ALLOY STEEL (REVERSIBLE)	2	2	2	2	2	2	2
BLADE DIMENSIONS	1" x 16"	1" x 13"	1" x 13"	1" x 12"	1" x 12"	1/2" x 10"	1/2" x 10"
WEIGHT OF PLOW (LBS.)	15360	11450	7800	7900	8575	6212	6212
WEIGHT OF LIFT FRAME (LBS.)	1990	1350	1350	1350	1325	1310	1310
TOTAL WEIGHT (LBS.)	17350	12800	9150	9250	9900	7522	7522

1 inch (") = 2.54 cm

1 foot (') = 0.3048m

1 pound = 0.453 kg

GENERAL INFORMATION

The ROOT PLOW is a V-shaped cutting blade, which is drawn laterally through the soil by a track-type tractor. The plow undercuts and kills brush and re-sprouting growth. Fins, attached to the cutting blade, push the severed root systems to the top of the ground where they are exposed to the sun. The ROOT PLOW also shatters and breaks hard surface crusts and hardpan, subsoils for better water retention and prepares a good grass seedbed.

Another application for the ROOT PLOW is removing stumps and roots from below the surface of the ground. Root Plowing is the only sure way of finding and removing stumps which are hidden under ground. The Plow's cutting blades undercut the stumps which are then ridden to the surface of the ground by fins mounted on the moldboard.

The ROOT PLOW is available for Caterpillar D6, D7, D8 and D9 Tractors. A Plow consists of a base assembly (or moldboard)

to which cutting blades are attached, two standards which support the base assembly and two draft arms which attach to the tractor trunnions. The cutting blades are hard surfaced for longer life. Fins are positioned on the base assembly to shatter hard soil and ride roots to the surface of the ground. The draft arms are equipped with auxiliary trunnions so that a bulldozer blade may also be attached to the tractor.

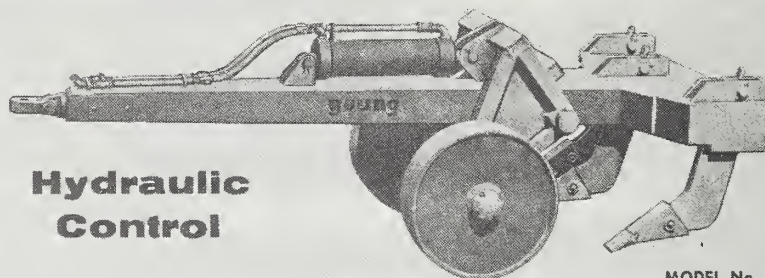
Operational depth of the Root Plow is controlled by a simple, fast change depth setting arrangement which has seven or more positions. This depth setting arrangement allows the plow to operate in a float position at the selected depth.

A grass seeding attachment, which mounts on the tractor, is available for seeding during root plowing. A ROOT PLOW for TOOL BAR is available for mounting on the tool bar of Caterpillar D4, D5 and D6 Tractors.

FLECO CORPORATION, JACKSONVILLE, FLORIDA, U.S.A.
FLECO OVERSEAS LIMITED, NASSAU N.P., BAHAMAS

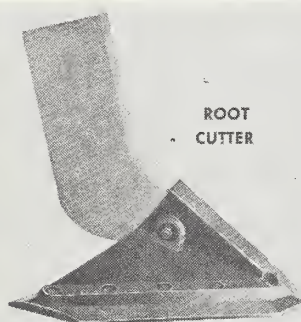
SUPER ROOTERS

Ruggedly built Super Rooters provide the performance features needed for rapid, economical ripping—accurate control, deep penetration, and fast, powerful lift. Shanks of alloy steel are correctly set for easy digging and are fitted with replaceable points. All-welded box beam provides maximum strength. Three compartments are provided for adding ballast as required. Drum type wheels are mounted on heavy duty Timken bearings. A Super Rooter can be operated with 1, 2 or 3 teeth to secure best results with any given ground condition. Available for hydraulic controls or cable controls.

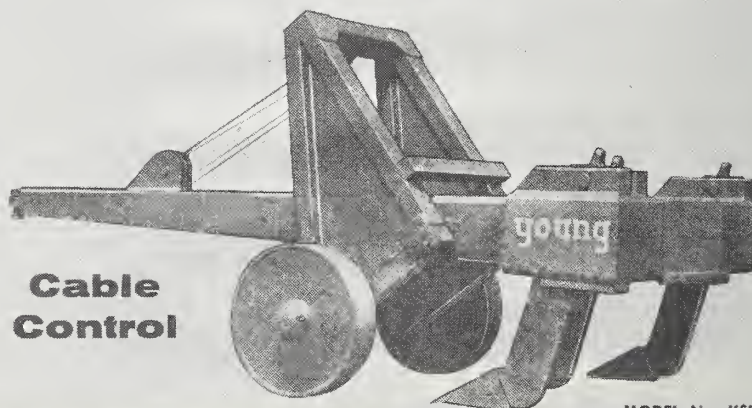


Hydraulic Control

MODEL No. HSR80



ROOT CUTTER



Cable Control

MODEL No. KSR60

	HYDRAULIC CONTROL		CABLE CONTROL		
SUPER ROOTER MODEL NO.	HSR-60	HSR-80	KSR-60	KSR-80	KSR-140
FOR USE WITH TRACTORS	90-140 HP	140-160 HP	90-140 HP	140-160 HP	160 HP up
CYLINDER	8 x 28	8 x 28	—	—	—
CABLE REQUIRED	—	—	1/2" x 65'	1/2" x 70'	1/2" x 75'
LENGTH (with swivel block down)	14'9"	16'9"	14'9"	16'9"	18'4"
WIDTH (bare)	6'6"	8'0"	6'6"	8'0"	8'3"
WIDTH (with tooth pins in place)	6'7"	8'1"	6'7"	8'1"	8'1"
HEIGHT (traveling position)	5'4"	6'4"	6'5"	7'1"	7'6"
WHEEL SIZE	36" x 10"	36" x 10"	36" x 10"	36" x 10"	42" x 10"
WHEEL GAUGE (center to center)	4'5"	5'10"	4'5"	5'10"	5'10"
TOOTH SPACING (center to center)	3'0"	3'8"	3'0"	3'8"	3'8"
NUMBER OF TEETH	3	3	3	3	3
DETACHABLE SHANK (cross section)	9" x 2 1/2"	9" x 3"	9" x 2 1/2"	9" x 3"	10" x 3"
ROOTS—REPLACEABLE	manganese steel	heat treated alloy steel	manganese steel	heat treated alloy steel	heat treated alloy steel
TOOTH POINTS—REPLACEABLE	integral part of boot	heat treated alloy steel	integral part of boot	heat treated alloy steel	heat treated alloy steel
GROUND CLEARANCE—MAXIMUM	10"	10"	9"-10"	8"	9"
WIDTH OF CUT (center to center of outside teeth)	6'0"	7'5"	6'0"	7'5"	7'5"
RIPPING DEPTH	24"	30"	24"	30"	30"
BALLAST CAPACITY	770# dry sand 1010# wet sand	1425# dry sand 1700# wet sand	770# dry sand 1010# wet sand	1425# dry sand 1700# wet sand	2400# dry sand 2900# wet sand
WEIGHT	6,040	8,470	6,290	8,590	13,400
OPTIONAL ROOT CUTTER NO.	375D33	375E30	375D33	375E30	375E30
ROOT CUTTER WEIGHT—EACH	180	240	180	240	240

ROCKLAND ROOT PLOW AND TOOL BAR

RP ROOT PLOW

For arid brush-infested rangeland clearing, the Rockland RP root plow is the answer.

The infinitely adjustable, horizontal, free-floating cutting edge slices roots below the bud zone, insuring maximum kill. At the same time, soil is loosened increasing water retention and stimulating new grass growth. Valuable top soil is not plowed under or dozed away.

RP root plows are either hydraulically or cable-controlled, and come complete with draft arms, auxiliary trunnions and necessary lift-frames. Bolt-on, heat-treated cutting edges are reversible and the standards have alloy wear guards. The main frame unbolts for transportation.

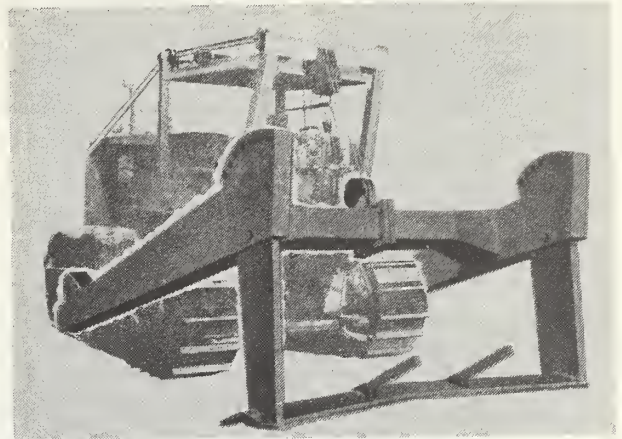
SPECIFICATIONS

Caterpillar (& other)	D-6	D-7	D-8
Width of Cut	96"	116"	144"
Cutting Depth Range	0-30"	0-30"	0-36"
Lift Clearance	24"	24"	30"
Blade Dimensions	$\frac{3}{4}$ x 10	1 x 12	1 x 12
Total Weight	6300	8200	9500

EXPORT CONVERSION TABLE

1 inch = 2.54 Centimeters	1 sq. ft. = 929 Sq. Centimeters
1 foot = 30.48 Centimeters	1 sq. yd. = 0.836 Sq. Meters
1 mile = 1.609 Kilometers	1 U.S. Gallon = 3.785 Liters
1 sq. in. = 6.452 Sq. Centimeters	1 lb. = 0.4536 Kg.

Specifications subject to change without notice.



The RP is designed for low cost, efficient, rangeland clearing. The fins break up and aerate the soil, as well as kick large roots to the surface, eliminating re-growth.

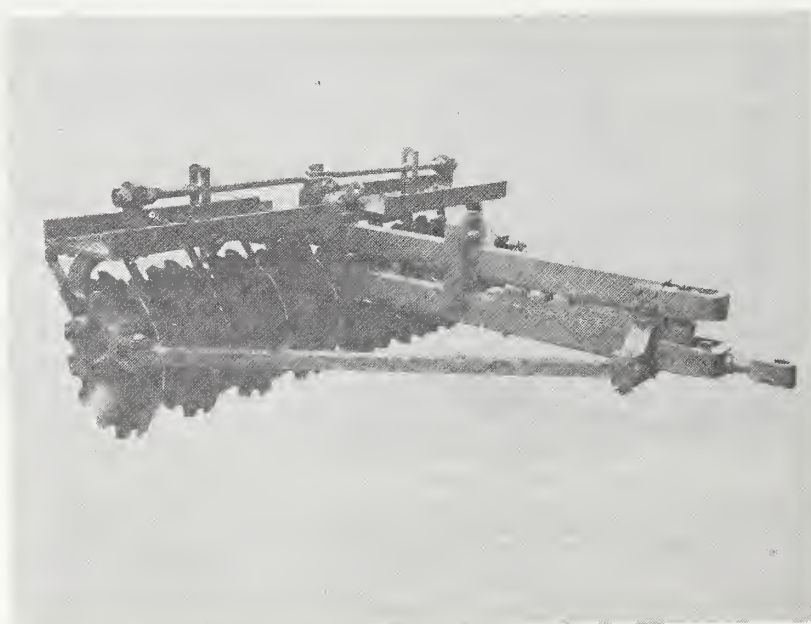
MOUNTING INFORMATION

RP root plows mount on a dual trunnion, which allows operation of front mounted equipment at the same time. Cable units are operated by a rear mounted cable unit (not supplied) and come complete with "A" frame and necessary sheaves. The hydraulic units come complete with cylinders and mounting frame. Pump, valve, and piping to the plow cylinders, are required to complete installation.

The ATHENS "Super" Heavy Duty Plowing Harrow was designed to withstand exceptionally hard usage, under extremely adverse conditions. This harrow is ideal for use on roads, airports and dams in mixing, pulverizing, aerating and blending soil with material for subbase.

The Athens "Super" Harrow is manufactured in single cut ~~and tandem~~ models, especially designed for land clearing. This harrow is heavy enough to clear land of brush, vines, small trees or heavy vegetation, built with high clearance to keep choking and clogging to a minimum.

After land is cleared with bull-dozer or root rakes the Athens "Super" Harrow is ideal for a thorough plowing job.



ATHENS "SUPER" HARROW MODEL S 12-28

SPECIFICATIONS

13" Disc Spacing		SINGLE-CUT MODELS			4" Axle Housing
Catalog Number	Width of Cut	Number of Discs	Approx. Weight	Scrapers	Required D. B. H. P.
S 8-28	10'	8	3601		40-50
S 10-28	12'	10	4241	Regular	50-60
S 12-28	14'	12	4771	Equipment	60-70
TANDEM MODELS					
S 16-28	10'	16	6922		65-80
S 20-28	12'	20	8111	Regular	75-90
S 24-28	14'	24	9262	Equipment	100-125

Athens "Super" Harrows are equipped with 28" Discs, 5/16" thick as regular equipment; 30" Discs x 3/8" thick available as optional equipment at extra cost.

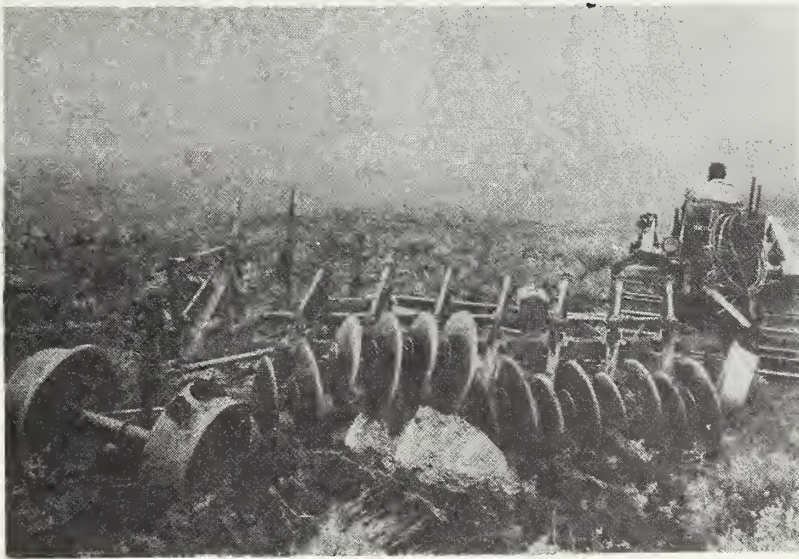
See your "Athens" Dealer for additional information.

BRUSHLAND PLOWS

1. Standard Brushland Plow

a. Description. In 1947 and 1948 under the direction of the RSEC, the Forest Service Equipment Laboratory (then in Portland, Oregon), developed a new disk-type plow called the brushland plow. The basic design was patterned after that of the Australian "Stump Jump Plow." The plow has seven disk arms, independently spring-loaded. Each arm supports one 28- and one 26-inch disk, supported by a single shaft and bearing assembly. If solid objects are encountered, the obstructed pair or pairs of disks raise while the others continue to work (fig. 4).

The plow is ruggedly constructed. All important bearings are of the antifriction type; well sealed against dust. The plow weighs about 6,000 pounds, and cuts a 10-foot swath.



Brushland plow. The present model has a single rear wheel.

b. Adaptability. The plow is especially effective on sagebrush lands. It can be used in rocky situations without excessive breakage and is considered superior to other seedbed preparation equipment in this regard.

The plow has been converted to an effective pitting implement by the Bureau of Land Management. Standard circular disks are replaced with 28-inch cutout disks as described in the Equipment Service Manual and Parts List for the Brushland Plow.

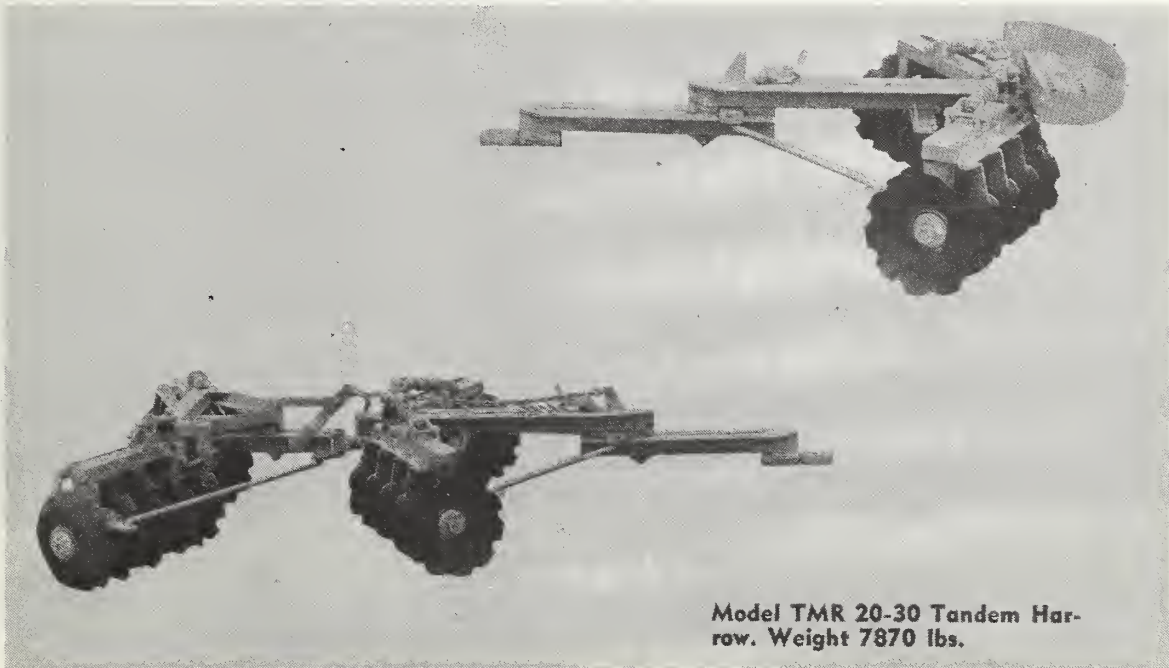
**BUSH AND BOG (Single Cut)
TANDEM (Double Cut)
HEAVY DUTY HARROWS**

ROME

**SERIES
MR**

For use with Caterpillar D4, D6, D7, D8 Tractors

**Model TMR 10-30 Bush & Bog
Harrow. Weight 4360 lbs.**



**Model TMR 20-30 Tandem Har-
row. Weight 7870 lbs.**

Series MR Rome Disk Plowing Harrows are recommended for use when a heavy duty, flexible implement is needed for hillsides, rough and uneven terrain, or where stumps or boulders may be encountered. They are ideal for use on newly cleared land, or land which has not been cultivated for a number of years; as well as for forest site preparation, and reclamation of washed out and eroded areas.

The original basic design for the Series MR Harrows has been improved steadily for many years with the experience gained from their wide use in agriculture, construction, and forestry throughout the world. Current models feature stronger frames, adjustable overhead knife-type scrapers, improved clearance for better trash handling ability and clog-free operation, and better durability for longer, more trouble free performance.

Rome Series MR Harrows take brush, vines, briars, small trees, and heavy vegetation in stride . . . cutting, plowing, and mixing surface litter and crop residues, and returning this valuable humus to the soil for rapid decomposition. They are efficient for open field and tough soil seedbed preparation as well as for pulverizing, aerating, and mixing and blending soils on highway, airport, dam, levee, and other construction. Series MR Harrows can be pulled behind any compaction roller—the rear section of tandem models can be disconnected and the front section used as a single cut bush and bog harrow. All models use simple, mechanical angling and de-angling requiring no hydraulic components or cable controls. A Hydraulic Angling Adapter is available for 8 disk models only.

SPECIFICATIONS

SERIES MR—Bush and Bog (Single Cut)—One Section 12½" Disk Spacing; 2½" Round Axles

Catalog Number	Width of Cut	No. of Disks	Suggested D.B.H.P.	Net Wt. (Lbs.)	Scrapers
Equipped with Timken Roller Bearings					
TMR 8-28	8'	8	40-50	3800	Standard
TMR 10-28	10'	10	50-60	4160	Standard
TMR 12-28	12'	12	60-70	4670	Standard
Equipped with White Hard Iron Bearings					
MR 8-28	8'	8	45-55	3810	Standard
MR 10-28	10'	10	55-65	4180	Standard
MR 12-28	12'	12	65-75	4680	Standard

STANDARD EQUIPMENT

- 28" diameter, 5/16" thick, cutout (notched) disk blades.
- Mechanical angling control.
- Weight box.
- Heat treated alloy steel axles.

OPTIONAL EQUIPMENT

- Heavy-duty gangs (larger flanges, spacers and bumper washers) in lieu of standard gangs, for severe conditions. For models with Timken Bearings only.
For 8 disk models, add 178 lbs. to weight.
For 10 disk models, add 216 lbs. to weight.
For 12 disk models, add 254 lbs. to weight.
- Depth gauges.
- Wear plates for Timken bearings.

OPTIONAL HYDRAULIC EQUIPMENT (for 8 Disk Models Only)

- 5" bore, 12" stroke hydraulic cylinder. Weight 80 lbs.
- Bracket for attaching hydraulic cylinder. Weight 327 lbs.
- Cylinder rod stops.

OPTIONAL CUTOUT DISK BLADES

FOR:			ADD PER BLADE:
Diameter	x	Thickness	Wt. (Lbs.)
28"	x	3/8"	12
30"	x	3/8"	20
30"	x	1/2"	41

SERIES MR—Tandem (Double Cut)—Two Sections 12½" Disk Spacing; 2½" Round Axles

Catalog Number	Width of Cut	No. of Disks	Suggested D.B.H.P.	Net Wt. (Lbs.)	Scrapers
Equipped with Timken Roller Bearings					
TMR 16-28	8'	16	60-75	6670	Standard
TMR 20-28	10'	20	70-85	7440	Standard
TMR 24-28	12'	24	85-100	8440	Standard
Equipped with White Hard Iron Bearings					
MR 16-28	8'	16	65-80	6700	Standard
MR 20-28	10'	20	75-90	7470	Standard
MR 24-28	12'	24	85-105	8460	Standard

STANDARD EQUIPMENT

- 28" diameter, 5/16" thick, cutout (notched) disk blades.
- Mechanical angling control.
- Heat treated alloy steel axles.

OPTIONAL EQUIPMENT

- Heavy-duty gangs (larger flanges, spacers, and bumper washers) in lieu of standard gangs, for severe conditions. For models with Timken Bearings only.
For 16 disk models, add 356 lbs. to weight.
For 20 disk models, add 432 lbs. to weight.
For 24 disk models, add 508 lbs. to weight.
- Depth gauges.
- Wear plates for Timken bearings.

OPTIONAL CUTOUT DISK BLADES

FOR:			ADD PER BLADE:
Diameter	x	Thickness	Wt. (Lbs.)
28"	x	3/8"	12
30"	x	3/8"	20
30"	x	1/2"	41

ROME PLOW COMPANY, Cedartown, Georgia, U. S. A.

Heavy-Duty Land Clearing, Tillage, and Land Preparation Equipment

See your Rome-Caterpillar Dealer for details

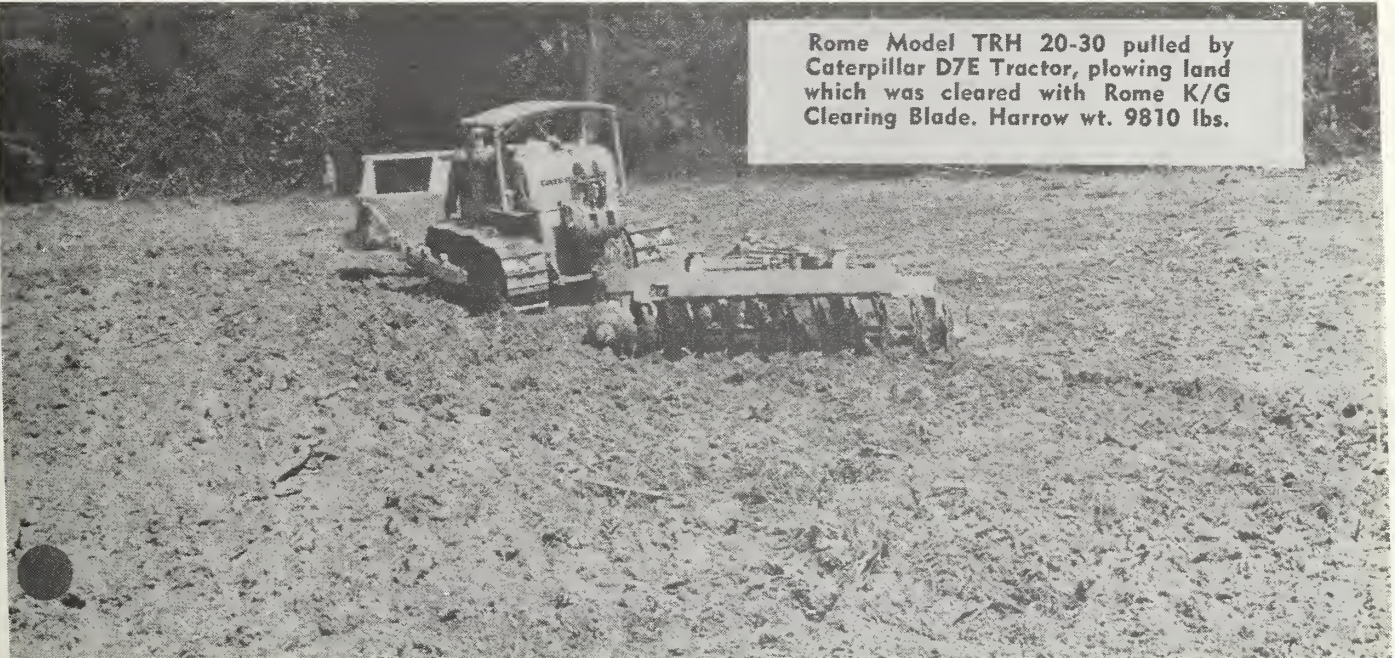
MATERIALS AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

HINGE TYPE OFFSET DISK PLOWING HARROWS

ROME

SERIES
TRH

For use with Caterpillar D6, D7, D8 Tractors



Rome Model TRH 20-30 pulled by Caterpillar D7E Tractor, plowing land which was cleared with Rome K/G Clearing Blade. Harrow wt. 9810 lbs.

Rome Series TRH Hinge Type Offset Disk Plowing Harrows are built for heavy service in breaking new ground, construction, and forest site preparation.

A boxed angle design provides increased clearance for better trash handling ability and clog-free operation, and greater overall strength and rigidity. Overhead, knife-type scrapers are standard equipment on all models. Disk blade gangs turn on Timken Roller Bearings. Extra heavy spacers and flanges insure positive support and alignment of disk blades.

A full range of adjustments is provided for different soil types and conditions. Optional equipment includes disk blades up to 32" in diameter, 1/2" thick, a weight box for adding extra weight, cable or hydraulic angling control, and depth gauges for precise control of cutting depth.

Good penetration in difficult conditions is provided by a weight of approximately 500 lbs. per disk blade. Cuts full width at uniform depth, without ridges or furrows.



ROME MODEL TRH 14-30. WEIGHT 7835 LBS.

HINGE TYPE OFFSET DISK PLOWING HARROWS

For use with Caterpillar D6, D7, D8 Tractors

SPECIFICATIONS

SERIES TRH—Hinge Type Offset - Single
14" Disk Spacing; 2½" Round Axles

Catalog Number	Width of Cut	No. of Disks	Suggested D.B.H.P.	Net Wt. (Lbs.)	Scrapers
Equipped with Timken Roller Bearings					
TRH 14-30	7 3/4'	14	70-80	7835	Standard
TRH 16-30	9'	16	80-100	8975	Standard
TRH 20-30	11'	20	95-130	9810	Standard
TRH 24-30	13'	24	130-155	12,265	Standard
TRH 28-30	15'	28	155-175	14,425	Standard

STANDARD EQUIPMENT

- 30" diameter, ⅜" thick, cutout (notched) disk blades.
- Mechanical angling control.
- Heat treated alloy steel axles.
- Overhead knife type scrapers.
- Brackets for attaching hydraulic cylinder.

OPTIONAL CABLE EQUIPMENT

- Cable angling control for 14 and 16 disk models. For use with standard mechanical latch. Includes sheaves, attaching parts, and automatic latch release. Cable not included. Weight 303 lbs.
- Cable angling control for 20, 24, and 28 disk models. For use with standard mechanical latch. Includes sheaves, attaching parts, and automatic latch release. Cable not included. Weight 312 lbs.

• OPTIONAL HEAVY DUTY DRAWBARS

For TRH 14, Weight 690 lbs.; for TRH 16, Weight 690 lbs., or Weight 740 lbs.; for TRH 20, Weight 775 lbs.

OPTIONAL HYDRAULIC EQUIPMENT

- 6" bore, 16" stroke hydraulic cylinder, Weight 151 lbs., for 14 and 16 disk models.
- 6" bore, 16" stroke hydraulic cylinder, Weight 202 lbs., for 20, 24, and 28 disk models.
- Cylinder rod stops
- Hose holders

OPTIONAL EQUIPMENT

- Weight Boxes: For 14 disk models, Weight 470 lbs.; for 16 disk models, Weight 600 lbs.
- Depth gauges.
- Wear plates for Timken bearings.
- Spring loaded spacers for severe operating conditions.

OPTIONAL CUTOUT DISK BLADES

FOR:			ADD PER BLADE:
Diameter	x	Thickness	Wt. (Lbs.)
30"	x	½"	21
32"	x	⅜"	13
32"	x	½"	35

ROME PLOW COMPANY, Cedartown, Georgia, U.S.A.

Heavy Duty Land Clearing, Tillage, and Land Preparation Equipment

MATERIALS AND SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

SEE YOUR ROME-CATERPILLAR DEALER FOR DETAILS

**EXTRA HEAVY DUTY
HINGE TYPE OFFSET
HARROW**

ROME®

**SERIES
TYH**

FOR USE WITH CATERPILLAR D8 AND D9 TRACTORS



**ROME MODEL TYH 16-36 PULLED BY CATERPILLAR D8 TRACTOR
PLOWING THROUGH HEAVY VEGETATION, ROOTS AND STUMPS
IN FOREST SITE PREPARATION**

HARROW WEIGHT 16,780 LBS.

The giant Rome TYH 16-36 Disk Plowing Harrow is designed for the most severe conditions in land clearing, forest site preparation, agriculture and construction. Its extra heavy duty axles and bearings are teamed with an extremely rugged Rome boxed angle frame to provide the utmost in strength and rigidity.

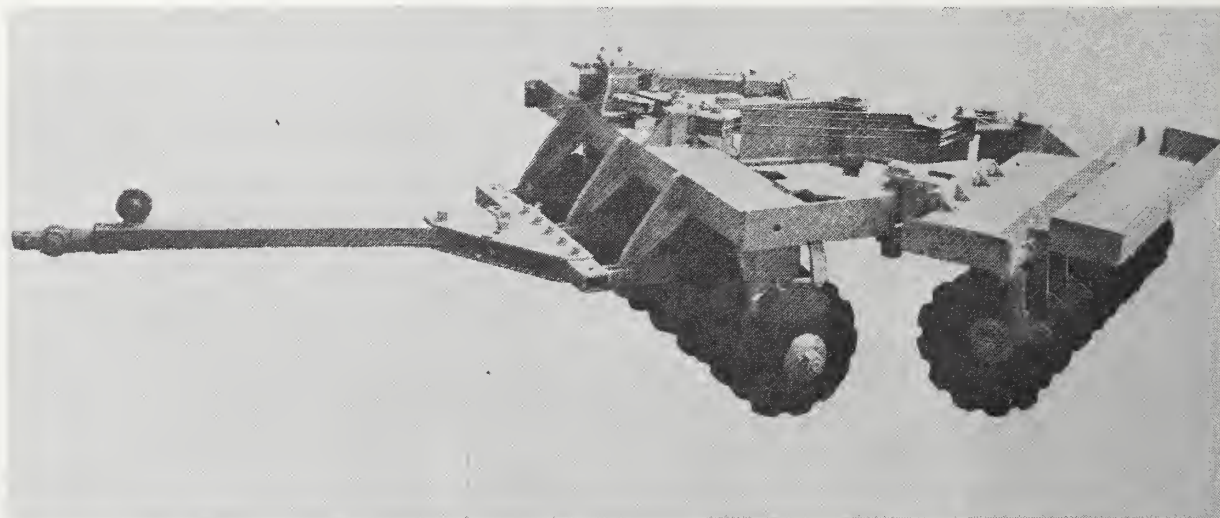
For penetration the TYH 16-36 has a weight of more than 1,000 lbs. per disk blade. It is built to match the horsepower and operating capabilities of the larger crawler tractors (Caterpillar D8 and D9 Tractors).

For agricultural and forest site applications, the TYH 16-36 can plow deeply through heavy concentrations of fibrous vegetation and litter, tearing up roots and stumps as it goes. It is the ideal harrow for extra rugged plowing following clearing operations with the Rome K/G Clearing Blade.

Among the construction applications for which the TYH 16-36 is particularly suited are breaking shale, pulverizing rock and scarifying. The Rome TYH 16-36 is the harrow for those jobs that require heavy weight, deep penetration and maximum strength.

**SERIES
TYH**

EXTRA HEAVY DUTY HINGE TYPE OFFSET HARROW



ROME MODEL TYH 16-36, WEIGHT 16,780 LBS.

SPECIFICATIONS

SERIES TYH—Hinge Type Offset
16" Disk Spacing; 3¼" Round Axles

Catalog Number	Width of Cut	No. of Disks	Size Disk	Weight (Lbs.)	Required D.B.H.P.	Scrapers
Equipped with Timken Roller Bearings						
TYH 16-36	9½'	16	36"	16,780	150-180	STANDARD

STANDARD EQUIPMENT

- 36" diameter, ½" thick, cutout (notched) disk blades
- Cable ongling control
- Weight box

ROME PLOW COMPANY, Cedartown, Georgia, U. S. A. 30125

Heavy-Duty Land Clearing, Tillage and Construction Equipment

See Your Rome-Caterpillar Dealer for Details

MATERIALS AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

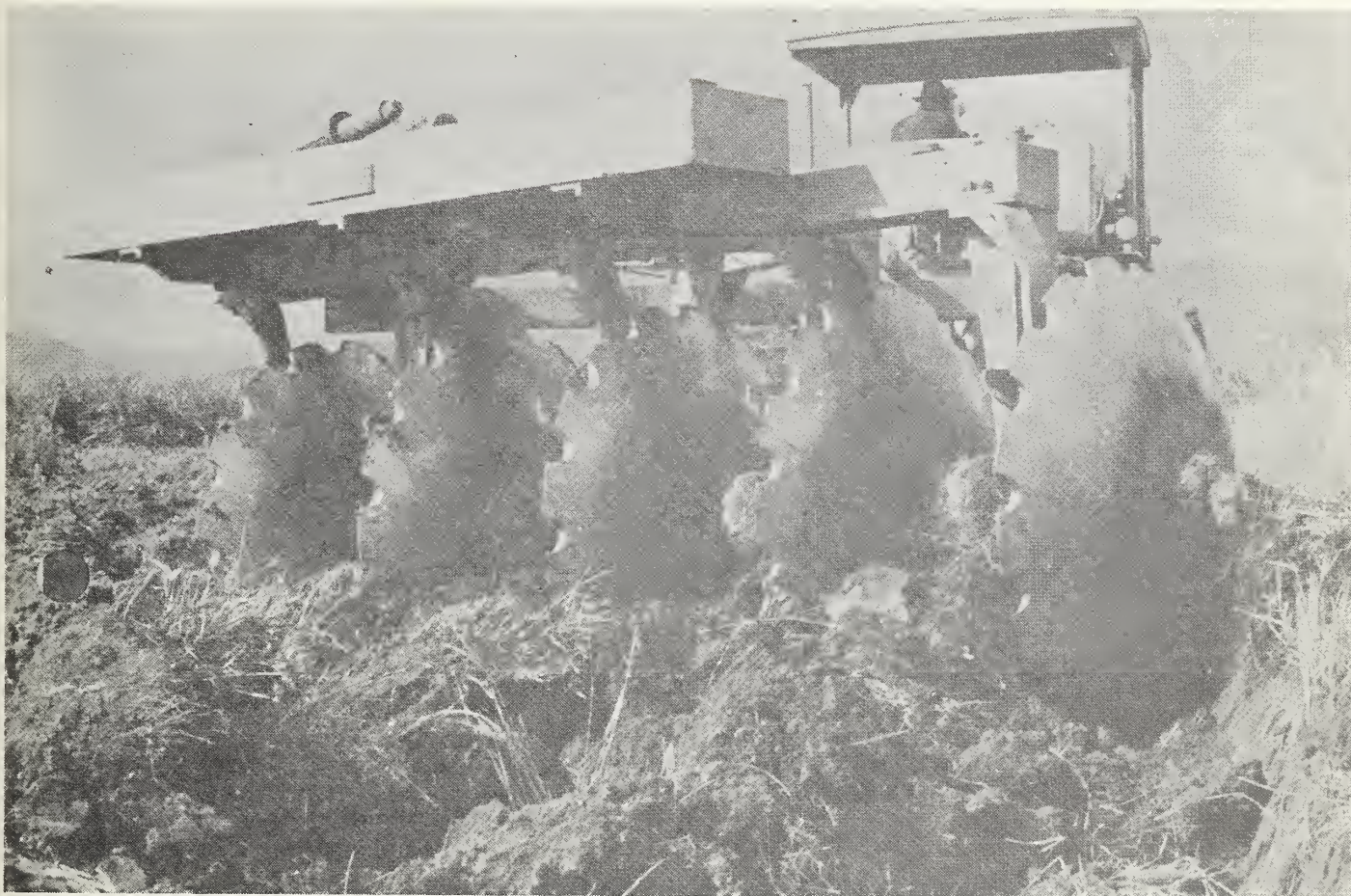


**EXTRA HEAVY DUTY
HINGE TYPE
OFFSET HARROW**

ROME®

**SERIES
TYMH**

FOR CATERPILLAR D8 AND D9 TRACTORS



**ROME TYMH 10-50 ATTACHED TO CATERPILLAR D8H TRACTOR
HARROW WEIGHT 15,500 LBS.**

Where maximum depth of penetration is the requirement for a harrow, the immense Rome TYMH 10-50 has no equal. With its 50" diameter disk blades and weight of 1500 lbs. per blade the TYMH 10-50 can readily plow through heavy trash or sticky clay to a depth of 19".

The Rome boxed angle design provides exceptional strength and rigidity combined with high clearance to minimize clogging. A full range of adjustment controls penetration in varying soil conditions.

The TYMH 10-50 is designed to utilize the horse-

power and operating capabilities of Caterpillar D8 and D9 tractors. In agricultural applications its deep tillage ability is unequalled, cutting and mixing to the full working depth and providing maximum aeration.

In highway and airport construction the TYMH 10-50 is the ideal implement for deep mixing and blending of base materials. It is particularly valuable for rapid mixing of deep fills following undercutting. The Rome TYMH 10-50 is the harrow for handling the toughest deep plowing jobs.

ROME, ROME K/G, ROME DISK PLOWING HARROWS AND ROMAN WHEEL ARE REGISTERED TRADEMARKS OF ROME PLOW COMPANY
CATERPILLAR AND CAT ARE REGISTERED TRADEMARKS OF CATERPILLAR TRACTOR CO.

EXTRA HEAVY DUTY HINGE TYPE OFFSET HARROW

SPECIFICATIONS

SERIES TYMH—Hinge Type Offset Harrows 28" Disk Spacing; 3¼" Round Axles

Catalog Number	Width of Cut	No. of Disks	Suggested D.B.H.P.	Net Wt. (Lbs.)	Scrapers
TYMH 10-50	10'	10	165-200	15,500	Standard

STANDARD EQUIPMENT

- 50" diameter, 3/4" thick, cutout (notched) disk blades.
- Mechanical angling control.
- Weight box.
- Brackets for attaching hydraulic cylinder.

OPTIONAL CABLE EQUIPMENT

- Cable angling control for use with standard mechanical latch. Includes sheaves, attaching parts and automatic latch release. Cable not included. Weight 315 lbs.

OPTIONAL HYDRAULIC EQUIPMENT

- 6" bore, 30" stroke hydraulic cylinder. Weight 202 lbs.
- Cylinder rod stops.
- Hose holders

ROME PLOW COMPANY, Cedartown, Georgia, U. S. A.

Heavy-Duty Land Clearing, Tillage, and Construction Equipment

See your Rome-Caterpillar Dealer for details

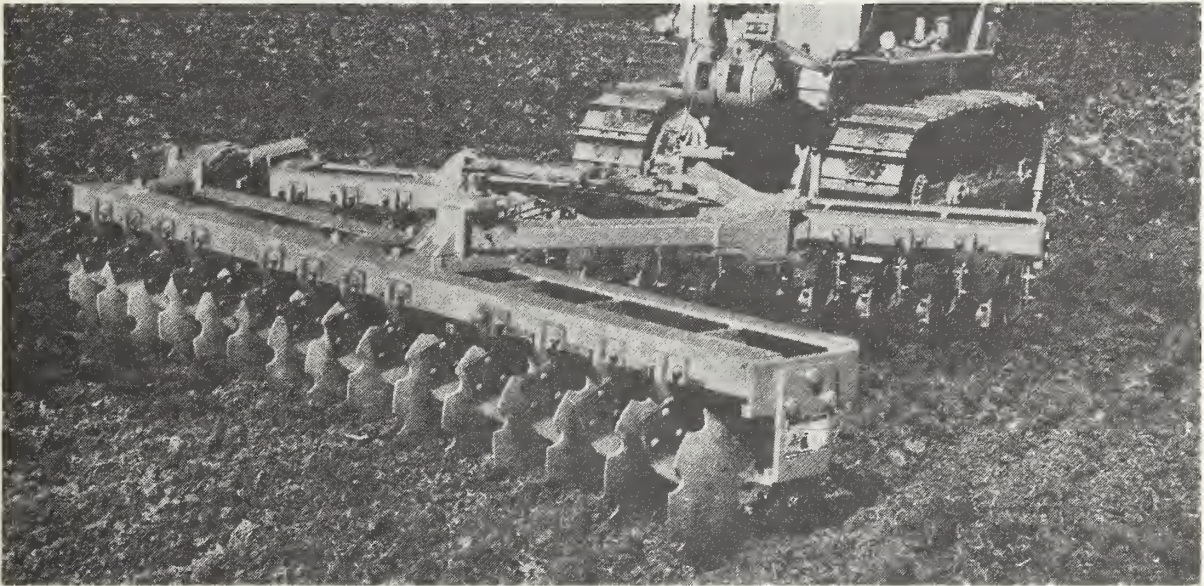
MATERIALS AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

GIANT DISC TILLERS

TOWNER

**MODEL
800, 801**

TOWNER MANUFACTURING COMPANY — P.O. BOX 3096 — SANTA ANA, CALIFORNIA 92706, U.S.A.



Towner Heavy Duty Giant Disc Tillers have been designed to do the really tough jobs of deep cutting and double turning of the soil that can best be performed by an offset plowing harrow. These tillers have been used on some of the world's major construction projects for a number of years with complete success.

Giant Tillers have full hitch leveling and cut adjustments provided. 800 Series tools come with 32" or 36" notched disc blades with 14" blade spacing. The 801 Series plow can be equipped with 36" or 38" notched blades that are space 16-5/16" apart. Cutting widths run from 8'2" to 20'. Wider squadron units can be provided on special order.

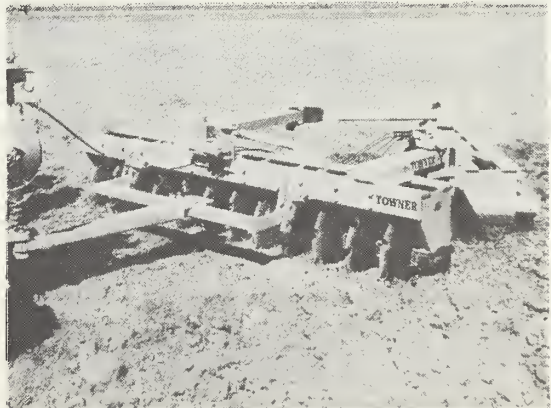
FOR CONSTRUCTION WORK

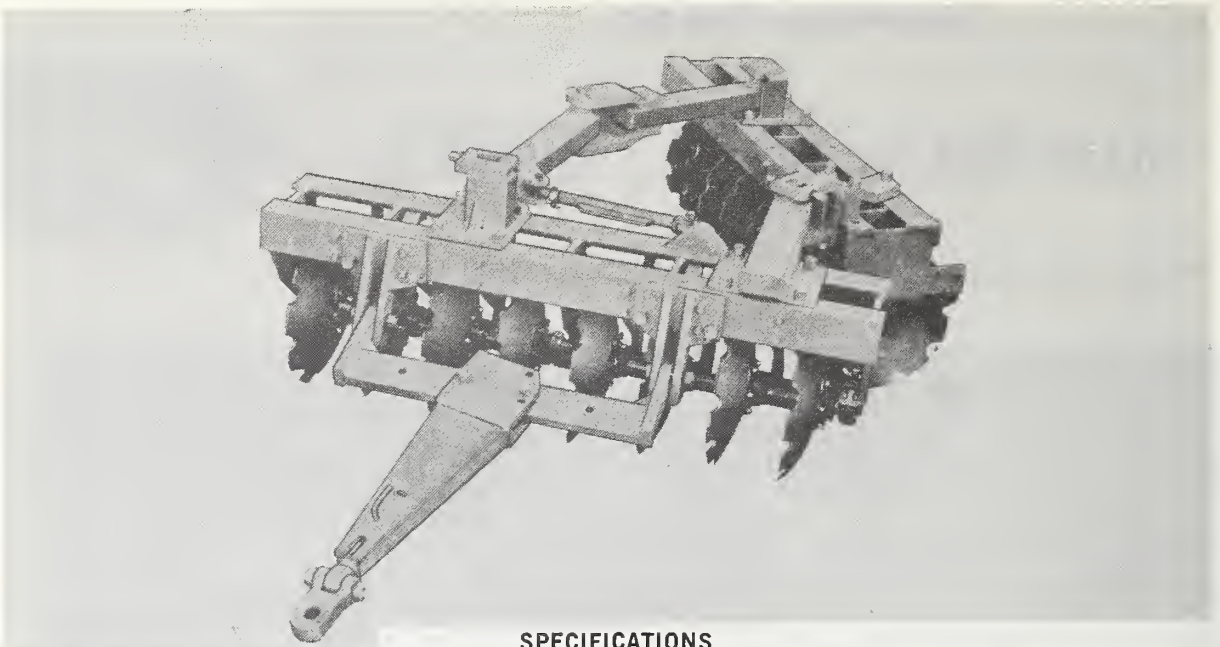
With 32" or 38" notched disc blades, Towner Giant Disc Tillers penetrate 12" to 16" for excellent mixing action on earth filled dams, canals, roads and highways. They are real time and money savers when it comes to aeration, mixing water and dry fill or binding "lifts" to avoid lamination. An 801-304 tiller with 20' cut moving 4 MPH with 16" penetration will mix over 20,000 cubic yards of material an hour.

Giant Disc Tillers find efficient use in borrow pits, as their twice-over action easily pulverizes the soil for loading and spreading.

FOR AGRICULTURAL APPLICATIONS

In one pass Giant Disc Tillers can cut and cover dense brush and small trees six to eight feet high. Firebreaks can be cut through heavy chaparral in a single pass. In range improvement projects, grasses can be planted at the same time as the plowing operation by mounting a seed box right on the tiller. Grazing has been increased ten-fold by this method. Tillers will be found useful in field plowing where their heavy weight will penetrate hard soils. Maximum cutting action and good trash clearance make Towner Giant Tillers well suited for sugar cane work.





SPECIFICATIONS

GANG FRAMES: Main frame is of 8" x 6" x 1" and 7" x 4" $\frac{7}{8}$ " structural grade angle with forged steel risers of $1\frac{1}{4}$ " plate. Frame is mounted high and clear soil thrown from discs to avoid trashing. Position of rear frame in relation to front frame can be adjusted to the right or left.

HINGE: Hinge and actuating arms are fabricated from boxed angles and heavy steel plate. Both have Towner's accurate leveling devices.

HITCH: Drawbar is of heavy boxed type construction and is provided with a swivel clevis. Heavy spreader bar and pull brackets are designed to give both lateral and vertical adjustments to the line of pull of the tool.

GANGS: Blades rotate on spherically mounted ball bearings which are protected by triple lip seals and steel clod shields. Blades are given added strength by bolts which secure them to forged steel spacer spools. The end mounting of gang bearings increases cutting efficiency—there are no large bulky bearing housings to drag in the soil, reduce depth of cut and collect trash.

CONTROL MECHANISM: The angle of cut can be adjusted while the tool is in operation. It is necessary to order either cable, hydraulic or mechanical (rope to tractor) control to maintain the desired operating angle.

TRASHBARS and SCRAPERS: Trashbars are standard equipment. Mud scrapers forged of abrasive resistant steel are provided as standard equipment.

DISC BLADES: High quality notched disc blades are standard on all models.

Stock Number	Approx. Weight	Width of Cut	Number of Blades	Sizes of Blades	Blade Spacing	H.P. Required
800-143	8130	8'2"	14	32" x $\frac{3}{8}$ "	14"	70-85
800-183	8765	10'6"	18	32" x $\frac{3}{8}$ "	14"	100-115
800-203	9595	11'8"	20	32" x $\frac{3}{8}$ "	14"	120-140
800-223	10675	12'9"	22	32" x $\frac{3}{8}$ "	14"	130-150
800-243	11450	13'10"	24	32" x $\frac{3}{8}$ "	14"	140-160
800-263	12530	15'	26	32" x $\frac{3}{8}$ "	14"	150-170
800-303	14560	17'2"	30	32" x $\frac{3}{8}$ "	14"	165-185
800-343	16550	19'6"	34	32" x $\frac{3}{8}$ "	14"	180-210
801-124	8780	8'2"	12	36" x $\frac{1}{2}$ "	16 $\frac{1}{8}$ "	80-95
801-144	9860	9'6"	14	36" x $\frac{1}{2}$ "	16 $\frac{1}{8}$ "	95-115
801-184	10570	12'2"	18	36" x $\frac{1}{2}$ "	16 $\frac{1}{8}$ "	130-155
801-224	13720	14'8"	22	36" x $\frac{1}{2}$ "	16 $\frac{1}{8}$ "	160-185
801-244	14840	16'2"	24	36" x $\frac{1}{2}$ "	16 $\frac{1}{8}$ "	170-195
801-264	15965	7'4"	26	36" x $\frac{1}{2}$ "	16 $\frac{1}{8}$ "	180-205
801-304	18170	20'	30	36" x $\frac{1}{2}$ "	16 $\frac{1}{8}$ "	200-240

Blades: Notched blades are standard. 36" x $\frac{1}{2}$ " notched blades are optional on 800 series tillers. 38" x $\frac{1}{2}$ " blades are optional on 801 series tillers. Add 10% to horsepower ratings if larger blades are used.

Tractor Drawbar: A swinging tractor drawbar is needed for successful operation of disc tillers. If tractor is not equipped with swinging drawbar, an optional swinging link is available.

Angle Control Mechanism: Optional hydraulic, cable or mechanical control mechanism must be ordered with each tiller.

(HORSEPOWER REQUIREMENTS ARE BASED ON CRAWLER TRACTOR DRAWBAR HORSEPOWER.)



Design, material and/or specifications are subject to change without notice and without liability therefor.

Sold By





